



REPEATER JOURNAL



CVRA - South Eastern Repeater Association, Inc.

NOVEMBER 1980



REPRESENTING UHF-VHF INTERESTS THROUGHOUT VIRGINIA,
NORTH CAROLINA, SOUTH CAROLINA, TENNESSEE, & WEST VIRGINIA

REPEATER JOURNAL HONOR ROLL

The persons listed below will be receiving a handsome certificate plus retain their place on the CVRA Journal Honor Roll for their outstanding and unselfish assistance to our organization. If you would like to be recognized and your name put on our Honor Roll, all you have to do is sign up 10 or more people as Associate Members. When you have verified that they have sent in their applications, send their callsigns with YOUR name, call and address to the "Repeater Journal" editor. His name is on page 1. Your name will appear the very next issue on the Repeater Journal Honor Roll. CVRA Officers, Directors or appointees are not eligible for this award.

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**East River Radio Club
Bluefield, W. Va.**

**Sam Kirby, WB4HAP
Corryton, Tenn.**

**Lyle Gaston, W8FG
Pratt, W. Va.**

REPEATER JOURNAL



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NOV—JAN 1980-81

"IN OUR 9th YEAR"

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ON THE COVER

The CVRA Parrots raise the new CVRA—Southeastern Repeater Association banner, depicting the new name for our organization. Art Ctsy. Jim Stanley, Winston-Salem,

CVRA REPEATER JOURNAL EDITORIAL COMMENT

WELCOME NEW DIRECTORS & VICE-DIRECTORS

As your Editor looks at the lineup of new Directors and Vice-Directors for the 1981-82 calendar years, I feel pretty good. We've got some top people who have the potential of really giving the CVRA the added incentive to continue growth in the future we have seen in the past.

I personally know almost all of the ten new officials, and I know they are going to be top-notch people for us. They are all dedicated Amateurs, each holds a high regard for CVRA and this is important.

The new Directors & Vice-Directors have a challenge over the next two years, unlike any other officer has faced. Our 2-meter spectrum is almost full in most areas and already full in others. It's going to be harder than ever to find that "perfect" frequency pair for someone who wants to put another repeater on 2-meters.

The challenge will be to get a frequency with the LEAST amount of interference possibilities. There are no such things left as interference-free frequencies. We have only so many channels available, and with so many repeaters on already, we've just about reached the saturation point.

We have pleaded for over a year for Amateurs to strongly consider another band if they want to put on a repeater, but our words, and the recommendations of the Directors have fallen on deaf ears. Well, it will be interesting to see what happens now, when NO frequencies are available in some areas without causing interference to some repeater already on the air.

Our new Directors will have to learn their job fast. When they visit the persons they replace prior to taking office on Jan. 1, they will get much information and many files to acquaint themselves with. At the January Director meeting the new officers will be able to talk with other officials and learn first hand things they encounter in their new job.

We are fortunate to still have among our ranks some "old timers" who have been around since the beginning of FM. A couple of our Directors and Vice-

(Continued on Page 10)

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NEWS AND AD DEADLINE FOR FEB—APRIL JOURNAL — JAN. 2, 1981

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NEW DIRECTORS FOR CVRA DISTRICTS ASSUME OFFICE JAN. 1

Nominating committee chairman, Charles Durst, WA4WTX reports that he had to look long and hard to come up with a slate of Directors and Vice-Directors for the CVRA Districts.

As we stand with things at this time, 5 new Directors and 5 new Vice-Directors are on the slate for the CVRA five Districts. After some shuffling and dropouts, no elections or balloting will be required in any of the Districts.

North Carolina, and South Carolina will be getting new Directors and Vice-Directors since officials in office expressed a desire not to be renominated. Virginia will get a new Director, with the Vice-Director staying on for another term. The two newest Districts, Tennessee and West Virginia are getting permanent Directors and Vice-Directors for the first time since coming into the organization. They had previously operated under "acting" Directors until election time.

All the new officials named will definitely become the new Directors and Vice-Directors, even though as the story is being written, the final act of the tellers proclaiming them as elected doesn't occur until October 20. However, all nomination deadlines are past so no changes can be made according to the by-laws.

Here are the way things stack up District by District:

SOUTH CAROLINA

Retiring Jack Watson, W4YPD will be replaced by Rich Tillotson, WA4SSJ of Easley, as Director. The new South Carolina Vice-Director is Edward Allen (Al) Harney, Jr., WB4URY of Columbia. Both new officers who will take over January 1st are well known and well liked in the South Carolina District.

RICH TILLOTSON is 39, married with 4 children. He has been an Amateur for 16 years and is a repeater Full Member through the Altamont Radio club which operates the 220 mhz. repeater on Sassifras Mt. near Easley. Rich is active on 2-meters and 220 mhz. He built one of the first Amateur repeaters in South Carolina on 6-meters in 1965 and operated it until 1971. One of the first autopatches was constructed on his 450 mhz machine in 1966. Rich is an Equipment Technician for A.T. & T. Toll Switching.

AL HARNEY is 27 years old, married and is a Customer Engineer with Pertec Computer Corporation. Al has been an Amateur for 4 years. He built and maintains the 220 mhz repeater in Columbia which has been on the air for two years, and the 07-67 machine which has been on the air for one year.

South Carolina Amateurs wishing to coordinate repeater frequencies, or any other CVRA services

should correspond with these new officers AFTER JAN. 1, 1981.

S.C. DIRECTOR
Rich Tillotson, WA4SSJ
321 Katherine Street
Easley, S.C. 29640
(803) 855-1451

S.C. VICE-DIRECTOR
Al Harney, WB4URY
1029 Elm Avenue
Columbia, S.C. 29205
(803) 254-6393

NORTH CAROLINA

Ed "Buff" Buffington, W4VGZ of Burlington will assume office of Director for North Carolina Jan. 1, replacing retiring Ken Woodard. Assuming Buff's old job of Vice Director will be Danny Hampton, K4ITL of Raleigh. Buff and Danny are both widely known Amateurs in North Carolina and should be able to carry on the excellent job for the State the previous Director did.

BUFF BUFFINGTON is owner and operator of the 475-075 machine in Burlington. He previously has served as N.C. Vice-Director for the past two years. Buff is an Engineer for Western Electric and offers a great technical expertise along with extensive experience in repeaters to the CVRA. He has helped numerous area repeaters with their technical problems and has had several articles

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1.3M30-140P	220 MHz	30	140



2M4-40P

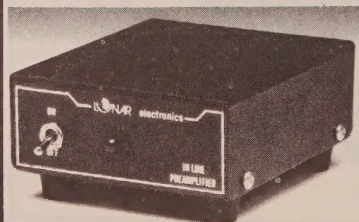


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DANNY HAMPTON is known far and wide in North Carolina and surrounding states. He has the distinction of placing on the air successfully the first "tall Tower" repeater in this area. Danny built and operates the 28-88 and 75-15 repeaters in Raleigh. He has built or assisted in many other repeaters around the State. Danny is a charter member of the N.C. FM Repeater Association, the predecessor of the CVRA. He has been instrumental in establishing a

CVRA REPEATER JOURNAL ADVERTISING RATE CARD

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INS. FT. 1 BK COVER (6 x 7 1/2)	\$65.00
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Contract advertising may be billed quarterly at the request of Advertiser. No volume discounts, or contract discounts are available. For Contract Advertisers, if no new copy is received prior to deadline, your ad will be reinserted as run in previous issue of the JOURNAL.

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linking system of various repeaters around the Raleigh area West across the State. Danny is extremely knowledgeable in all aspects of repeater operation.

North Carolina repeater owners wishing services of CVRA of any type should contact either Buff or Danny after January 1, 1981.

N.C. DIRECTOR
Ed "Buff" Buffington, W4VGZ
2736 Woodberry Drive
Burlington, N.C. 27215
(919) 227-6356

N.C. VICE-DIRECTOR
Danny Hampton, K4ITL
550 Granite Street
Raleigh, N.C. 27603
(919) 832-8733

VIRGINIA

Carter Cogle, K4ARO after serving 2 terms as Virginia Director and a term as Secretary of CVRA is retiring after Jan. 1. The new Director nominated and elected to replace Carter is Mike Williams, KC4AO. Amos Rhames, K4WQS was renominated and agreed to serve another two years as Vice-Director. Mike and Amos know each other well, and should be able to carry on a good job for the Old Dominion with the CVRA. Mike lives in Danville, but works near Richmond during the week. Mike is also presently serving as Secretary of the CVRA and will continue to do so, until a new Secretary can be appointed at the annual meeting in January by Lane Tarleton, CVRA President.

MIKE WILLIAMS is 40, his Amateur interests have included about every band over the past years. He presently operates mostly 2 meters, with some low band work. He is an instructor at the Vocational School in Henrico County, teaching Broadcasting. He was instrumental in getting a public service FM station on the air at the school. Mike is married with one child. His wife also a ham is WA4MZG, Norma.

AMOS RHAMES, is a charter member of the N.C. FM Repeater Association and served as Vice Director in Virginia District for CVRA the past two years. Amos operates the WR4BDN 10-70 repeater serving the Danville area from White Oak Mountain. Amos is well known "everywhere" both on low bands, and 2-meters. he is married and is a Supervisor for Colonial Pipe Line, Co.

Amateurs wishing coordination or any other service from the CVRA should contact Mike or Amos after January 1.

VA. DIRECTOR
Mike Williams, KC4AO
300 McClellan St.
Sandston, Va. 23150
(804) 737-4622 Wk. Days
(804) 793-8302 Wkends

VA. VICE-DIRECTOR
Amos Rhames, K4WQS
2830 Blairmont Dr.
Danville, Va. 24541
(804) 792-0443

WEST VIRGINIA

West Virginia CVRA members have come up with excellent choices in the newest District for

Director and Vice-Director. For Director, Mike Palmer of Morgantown was unanimously elected with Karl Morris of St. Albans, Vice Director. Palmer, K8LG was acting Director until permanent officers could be installed for the District.

MIKE PALMER is a CVRA Full Member, representing the Morgantown 83-43 sub band repeater. He is 38, and has been a ham for 23 years. His main interests in Amateur radio include mostly 75 meters and 2 meters. Mike is married with 2 children.

KARL MORRIS, WB8GDY, is the new Vice-Director. He is also President of the West Virginia State Amateur Radio Council—AM/FM Repeater Advisory Committee. Karl a Full Member of CVRA representing the WR8AJS 40-00 repeater in St. Albans.

After Jan. 1, repeater owners wishing to coordinate or correspond with CVRA should contact either Mike or Karl:

W.VA. DIRECTOR

Mike Palmer, K8LG
1313 Airport Blvd.
Morgantown, W. Va. 26505
(304) 296-9175

W. VA. VICE-DIRECTOR

Karl Morris, WB8GDY
1009 Sand Hill Drive
St. Albans, W. Va. 25177
(304) 727-8453

TENNESSEE

Tennessee, our 4th District in the CVRA has elected their first Director and Vice-Director to a 2-year term, beginning January 1, 1981. Sam Kirby, WB4HAP was nominated as Director, and Cliff Hensley, WB4NKL nominated as Vice-Director. The two being unopposed were elected by the elections committee. Both men are well known in the State and will guide the CVRA well in their positions.

SAM KIRBY is 36, a ham for 14 years, is married with 3 children. His interests in Amateur radio are the UHF/VHF regions. Sam represents CVRA through the 13-73 English Mt. repeater.

CLIFFORD (Cliff) HENSLEY is owner with his cousin, Larry WB4NKM of the 223.34-224.94 repeater on Camp Creek Bald Mt. at over 4,800 feet. His cousin Larry describes Cliff as a very sharp person in electronics and Cliff is well versed in repeater operation.

Tennessee Amateurs wishing to coordinate repeater frequencies, or correspond with any CVRA business should contact either Sam or Cliff after January 1.

TENN. DIRECTOR

Sam Kirby, WB4HAP
Rt. 3 Majors Road
Corryton, Tenn. 37721
(615) 922-1558

TENN. VICE-DIRECTOR

Cliff Hensley WB4NKL
Rt. 2, Box 25-C
Limestone, Tenn. 37681
(615) 257-2100

NOMINATING COMMITTEE CHAIRMAN NOTES

Charlie Durst, WA4WTX said this was probably

ELKIN HAMFEST FEB. 22

The North Carolina Hamfest season kicks off February 22 with the Elkin Winter Hamfest at Elkin, North Carolina.

This highly successful little hamfest will again be held in the heated National Guard Armory. The Briarpatch ARC said they have not chosen prizes for the upcoming event as of yet, but they say the usual breakfast and lunch will be served by the Ladies Auxillary of BARC.

Talk-in will be on the Briarpatch 69-09 repeater. Further information about the Elkin Winter Hamfest may be obtained by calling either Earl Day, WB4GDP (919) 835-3509. or Phil Berry, N4AKZ (703) 728-3203.

the hardest job in years of selecting nominees for the Director and Vice-Director offices in the five CVRA Districts. Acting as chairman of the nominating committee, Durst was charged with finding the best available people he could possibly find for the all-important jobs of Director and Vice-Director.

"I'm well pleased", Durst said, "I think we have 10 good men from our five Districts who are all conscientious and hold the CVRA in high regard, so they should do a very good job for the organization."

Under the by-laws, Durst with his committee was to find nominations for each office, from each of the five Districts. Generally the nominating committee comes up with only one nomination for each office in each District. This was the case this year, however they were some nominations from repeater groups in two Districts which could have caused a ballot and election among the Full members of each District. The Secretary prepared ballots for Tennessee, then the nominee named by the committee dropped out leaving only one, so no ballots were mailed.

West Virginia had a similar situation for Vice-Director, but with one person dropping out, no election was necessary in that District also. So as you have read in this story, all five new Directors and five Vice-Directors were to be proclaimed elected by the committee of tellers on October 20th. Each new officer will begin his term on January 1, 1981 after meeting with his predecessor and getting all files and information.

The new officers will officially be installed at a Directors-Officers meeting scheduled in Danville, Va. sometime in January. At this meeting they will receive additional materials and helpful aids in learning their new jobs.

From the nominating committee, good luck and best wishes to our new officials.

MILIUS & KANODE NEW ARRL ROANOKE OFFICIALS

Gay Milius, Jr., W4UG has been elected new Roanoke Division Director of ARRL, with John Kanode, N4MM named as Vice-Director.

The two Virginians ran unopposed for office in the Roanoke Division and were proclaimed elected by ARRL in October. Phil Wicker, W4ACY had previously announced his retirement as Director and would not seek another term. (See separate Story).

Gay Mulius, new Roanoke Division Director hails from Virginia Beach, Va. He is quite active in clubs, organizations and well known in Amateur circles. Gay is retiring Vice-Director for the Roanoke Division under Wicker for two terms. He was formerly a member of the ARRL DX Advisory Committee, a past vice-director and assistant director in the Hudson Division, past officer of numerous radio clubs, past public relations assistant, holder of Public Service Award, past Emergency Coordinator and past Liaison to board of directors ARRL.

Milius is a life member of ARRL and QCWA as well as a member of AREC, RACES, ROWH and RCC. He has published numerous articles in professional and hobby organizations.

Gay works lots of DX, and is working on several

awards although he has qualified for numerous awards already.

The new Director is a retired attorney and retired Commander, USNR with 20 years active duty.

John Kanode, N4MM, new Vice-Director of Roanoke Division hails from Boyce, Va. He has been active in Amateur Radio for over 28 years and has held an extra class license since 1958. John is well known as being manager of the ARRL W/N/K four QSL bureau for over 5 years.

John has held more calls than many of us have worked, including: W4WSF, K5UYF, KZ5II, HP1XWS, KJ4ITU, KK4ITU, WA3LYH, WA4LDI and N4MM/PJ2. He has received numerous operating awards from ARRL, plus over 300 operating awards from most major overseas Amateur Radio societies.

Kanode is presently serving on the ARRL DX advisory committee and is President of the National Capitol DX Association. He also served as Assistant Director Roanoke Division for six years. He has held the presidency and vice presidency of several radio clubs in his area. John is also a life member of ARRL, AMSAT, QCWA and the International Radio Club.

In his comments to the Journal about the new officials, Phil Wicker said Milius and Kanode had done a fantastic job for him over the past years and that they would continue to uphold the high standards the Roanoke Division holds within the ARRL.

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LICK KNOB — NEW REPEATER FOR SOUTHERN WEST VIRGINIA



A TOUGH ROW TO HOE. The "road gang" gets together to fill in some ruts on the road leading to the top of Lick Knob, home of the W8FG/R repeater. Supervising on the left is Lyle Gaston, W8FG, then Jim Stevens, KA8JZH, Ted Wolfe, WD4KHL; Jim Miller, WD8SCZ; and John Cook, K8ZNX. (Photo by WD4KHL).

—by Ted Wolfe, WD4KHL

PRATT, W.VA.—It wasn't planned as a wide-area repeater, but that's what the new 87-47 sub band repeater in Southern West Virginia atop Lick Knob turned out to be.

The repeater, with Lyle Gaston's W8FG call, was planned for over a year. It became a reality in June when the Kenawha-Fayette-Clay ARA put a new

Spectrum 1000 machine on the air at Lick Knob, astride the Fayette-Raleigh County line near the Mossy Interchange of the West Virginia Turnpike.

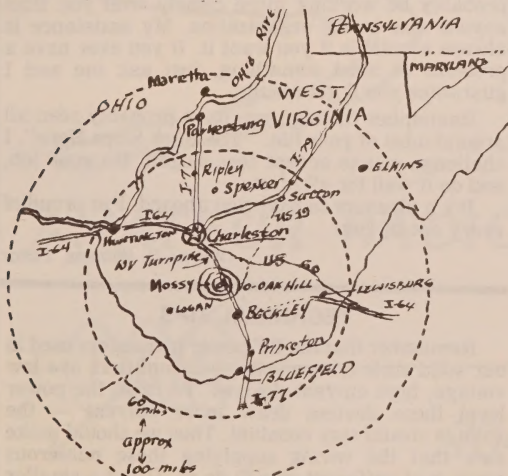
The repeater is equipped with Phelps-Dodge duplexers and antenna. The antenna is mounted on a tower at the 3,250-foot altitude at the site which also has a number of commercial installations nearby. Input power to the antenna is around 25-watts.

The machine is housed in a 5 x 5-foot cinderblock building formerly used by an area TV station for a microwave relay. The repeater building and tower are adjacent to a taller fire tower operated by the West Virginia Department of Natural Resources.

The new machine was installed on Monday, June 16 by W8FG, KC8J and others, but there was an immediate problem. One of the best known and respected technicians in the area, R.I. Monroe, W8WHQ, took his service gear to the mountaintop on Wednesday the 18th to check it out. The repeater was removed to his shop for the day, and then reinstalled on Thursday.

The first month's operation coincided with

(Continued on Page 17)



COVERAGE MAP of the W8FG/R 87-47 repeater on Lick Knob. Mobile coverage extends beyond the 60-mile mark and base station coverage in excess of 100-miles.



W8FG/R REPEATER is housed in the white concrete block building to the left. The 87-47 sub band repeater is located atop Lick Knob. The tower to the right is a fire tower. The area is near the Mossy interchange of the West Virginia Turnpike (I-77). (Photo by Ted Wolfe, WD4KHL).

NEW DIRECTORS READY

(Continued From Page 1)

Directors are returning to office after several years of absence. They were charter members in the old North Carolina FM Repeater Association in 1971, predecessor of the CVRA.

Over the past few years, our Directors have learned to work and communicate with each other more. This cross-merchandising helps each to understand the others problems.

Our new Directors and Vice-Directors will face some tough problems in the future, problems of interference, problems of convincing someone not to put a "pirate" repeater on an interfering frequency, and problems of keeping everyone convinced that the CVRA is the best thing we've got going for us in this area.

We've managed over the last few years to continue to maintain relatively interference free bands in our territory. If you dispute this, drive up north to some of the large cities and learn what interference really is like. Northerners coming south still are amazed how trouble-free the bands are in our area, and how friendly our CVRA territory Amateurs really are.

Our new Directors will "inherit" some existing problems which have not been solved, but fortunately these problems are few and some are not very bad, a couple are far from solution, but there is always hope.

I personally challenge our new Directors and Vice-Directors to see that there is a majority of membership repeaters in their District. We can never let up in membership, we must have members to maintain stability in the organization. The dues are necessary to offset the expenses required to keep the CVRA functioning.

You new Directors and Vice-Directors that have accepted the challenge and in accepting the post, you have told us — "I am willing to work". Don't ever say "I just didn't have time to get the job done". I for one feel this is totally unacceptable. Suppose I just didn't take time to get out a journal. Suppose I just didn't take a whole weekend to contact as many of you personally and find out something about you, and try to give you support and information. Suppose I didn't bother to make that last minute change you sent me in a story, the repeater index or whatever. You see what I mean? You have got to TAKE TIME and do the job. Your personal pride will demand that you do a good job. Your entire district is depending on you doing a good job, there is no one else to do it for you.

The average ham can carefully read the Journal, he can look at the repeater index for membership, and he can tell exactly what kind of job his Director and Vice-Director is doing. A busy director coordinating frequencies, will show changes in the in-

dex. A busy Vice-Director soliciting full membership will show many "N"s for non-membership being wiped off the index for his State or District.

Hard working Directors and Vice-Directors will have lots of news in the Journal about their District. The Journal Staff doesn't go out and dig up the news like NBC or ABC or CBS. We take what our Directors, Officers, Vice-Directors and membership sends to us, rewrite if necessary and see that it is placed in the Journal.

Things are ALWAYS happening in your territory. See that you as a Director or Vice-Director know what is going on. See that clubs and repeater owners look to you for guidance. See that they send you news because they know you will get it published in the Journal.

Your name should be familiar across your State. You should see that EVERY club, EVERY repeater group, EVERY individual in your District knows about the CVRA, and they know YOU are running the CVRA for them in that State. Any thing less and you aren't doing your job properly. A few minutes a day, or an hour a week to write a letter to a club or group will reap many benefits to you as an officer, and to the CVRA as a whole.

I'm excited to see such new fresh and good talent come into our organization. I think we are going to see some added results next year as they begin the task of moving forward into the future. The groundwork has been laid for each of you. Back in 1971 it all started. A few repeater owners had visions of what we have now, and they got it all started for you, now it's up to you to carry on and not let them down.

I as Editor of the REPEATER JOURNAL will probably be working more closely with you than anyone else in the organization. My assistance is always available if you want it. If you ever have a problem or need something, just ask me and I guarantee you'll get results.

Remember the sign you have probably seen all around most of your life: "The Buck Stops Here". I challenge you to accept that slogan. Do your job, and do it well for all of us.

It's a pleasure to have you aboard. I'm proud of every one of you!

—Wayne C. Williams, Editor

TECHNICAL TIPS

Remember that the RF power transistors used in our solid state transceivers and amplifiers are low voltage, high current devices. To raise the power level these devices draw more current — the voltage should stay constant. Thus we should make sure that the wiring supplying these numerous amps is of sufficient size to do so. Using a smaller wire causes a voltage drop at the rig and results in unnecessary power loss.



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THIS DOWN TO A
SHORT TALE....

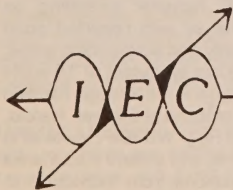
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CVRA DISTRICT RAMBLINGS

Compiled by Journal Staff

NASHVILLE, TENN. Sam Kirby reports much interest in CVRA at the Nashville Hamfest this past Summer. He said he set up an information booth to educate more Tennessee amateurs about CVRA. He introduced our organization to many repeater owners in the Nashville area also.

BRIARPATCH MT., VA.—Phil, N4AKZ reports a twister hit Grayson County Virginia in July and took down the tower for the Briarpatch 69-09 repeater. The tornado wrecked the tower breaking it into 2 pieces and destroying the Hustler antenna. Phil said the machine was on the air but quite weak until repairs could be made to the tower and antenna.

FT. WALTON BEACH, FLA.—Art WB4WZH writes he can now drive from Fayetteville, N.C. to Ft. Walton Beach in Florida and use his CVRA JOURNAL for updated listings of all repeaters down the line. He said he didn't have to even open his ARRL Directory once during the entire trip through North Carolina, South Carolina, Georgia, Alabama and Florida. (Ed: Tnx Art, we're trying to make it that way for travelers down the East Coast someday.)

PRATT, W.VA.—The new 87-47 sub band repeater on Lick Knob near Pratt is on the air with reported superb coverage. The machine was officially on June 19th at 8:00 p.m. The CVRA Full member repeater is represented by Lyle Gaston, W8FG (which is the repeater call) and Garry Humphery, KC8J.

ROBBINSVILLE, N.C.—Tom Ward reports a change in ownership of the Robbinsville 445-045. The repeater is now operating under the call of WB4ZQB/R. The 6-meter Robbinsville machine is no longer on the air. (Tom, WB4ZQB)

RALEIGH, N.C.—Jerry Haigwood, KY4Z has coordinated a repeater for Raleigh with the CVRA. The machine is scheduled to operate on 915-315. (Ken, WA4BVW)

HOPE MILLS, N.C.—Doc Britt, WA4DEG has coordinated the frequency of 445-045 with the CVRA for a new repeater in that area. A group near Fayetteville plans to put on a machine. (Ken, WA4BVW)

KNOXVILLE, TENN.—Sam and Matt Kirby, WB4HAP and WB4IOB have bought the 52.15-53.15 Knoxville 6-meter repeater. Sam said the machine which has been floating around the East Tennessee, Western North Carolina area for the past two years will be placed on English Mountain with the 2-meter WR4APU 13-73 repeater. The 6-meter machine is a VHF Engineering repeater with Wacom Duplexer and multiple stacked

dipole antennas. Antenna elevation on English Mt. is 3,700 feet AMSL. (Sam, WB4HAP)

GREENVILLE, N.C.—The new Greenville 96-36 repeater is on the air and reporting good coverage for the area. The machine is operating under the call of W4AMC.

GREENSBORO, N.C.—Bob KZ40 has a string of bad luck to report. Last issue we reported he had bought the 223.22-224.82 repeater which has moved around two states trying to find a permanent home over the past 4 years. During a violent wind storm Bob lost his tower in the wind, and down came the repeater antenna. He said they were just getting some activity started on RTTY with the machine. Later this summer the machine was moved to a 500-foot tower in East Greensboro. This didn't work either, the commercial FM station on the tower also, was feeding into the repeater. So at press time, Bob has his 220 repeater back home. (Rumors are that Bob may be encouraged to link with a 2-meter RTTY bunch in Virginia. Ed.)

BLUEFIELD, W.VA.—The "East River Current", newsletter for the East River ARC of Bluefield is one of the many outstanding publications sent to the CVRA JOURNAL Editor. It is noted with thanks that the EAST RIVER CURRENT always has among its interesting pages, a CVRA ASSOCIATE MEMBERSHIP application, encouraging all who read the newsletter to join CVRA as Associate Members. On the back page of the bulletin, a very updated calendar which lists events from FCC exams and their location to Hamfests, club meetings and ARRL contests. (Ed: would be nice if every club reproduced a CVRA membership application in their newsletters. It can be very easily clipped from the JOURNAL and reproduced.)

KNOXVILLE, TENN.—The 90-30 W4BBB/R repeater is now sending computer generated Morse code for practice in conjunction with a Novice class that the Radio Club of Knoxville is sponsoring. The code practice is from 8:30 to 9:00 p.m. each evening just preceding the East Tennessee Emergency Net. (Sam, WB4HAP)

EDEN, N.C.—The WD4DIP/R repeater operating on 99-39 in Eden is now on the air with reported good coverage for Rockingham County and surrounding areas. The VHF Engineering machine has an output of 15 watts into a Wacom Duplexer. The signal is fed through hardline into a Hustler omni-directional antenna at 60-feet. Harold, WA4QBG, Tom, WB4EQF and Roger WD4DIP, invite all in the area to use the new machine, and extend their thanks to all the assistance and donations from individuals to make the machine possible. Tom and Harold are representatives for the machine in CVRA membership. (Roger, WD4DIP)

(Continued on Next Page)

DISTRICT RAMBLINGS . . .

GREENEVILLE, TENN.—The 223.34-224.94 WB4NKM/R machine is sporting a new autopatch which is radio linked from the mountaintop on 440 mhz, down to Greenville. A new Philips-Dodge Stationmaster is on order for the repeater. Cliff, WB4NKL indicated the new antenna to be placed at the top of the 120-foot tower should improve coverage in all areas, especially into North Carolina. The old antenna, a home-brew coaxial is mounted at about 60 feet, with the tower shadowing Western North Carolina. (Sam, WB4HAP)

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GREENSBORO, N.C.—Robert KZ40 reports to the Journal that he has put a 65-25 sub band repeater on the air at his home on the South side of Greensboro for RTTY operation. The frequency is one which had been chosen earlier by Frank, N4AZM, who turned the frequency to Robert. (Bob, KZ40)

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RICHMOND, VA.—The Telephone Pioneers Radio Club 04-64 repeater recently made improvements to the 24-hour machine. A new antenna system should be in place as you read this. The 34-94 RATS repeater has a revamped installation in OEES Headquarters for emergency uses. All damage from summer lighting storms have been repaired. The W4ZA repeater operates 24-hours a day. The WR4ACW Richmond repeater, 28-88 will soon be a new solid state exciter and transmitter. Other plans for additional improvements and facilities are in the works. (Jim, K4OJE)

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GUM SPRINGS, VA.—The KB4GX/R Gum Springs repeater in service 24-hours now serving the central Virginia area form Charlottesville to Richmond. Improvements have been made to the facility. (Jim, K4OJE)

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KNOXVILLE, TENN.—The WR4APU, 13-73 machine now has full emergency power. When the machine switches over it drops to 10-watt power level for battery conservation and indicates its condition to the user by shortening the usual 3 second carriertail to 1 second duration. (Sam, WB4HAP)

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MANTEO, N.C.—The Fessenden Radio Club, operators of the 34-94 machine at Manteo on the coast of North Carolina reports a new antenna on top of a 100-foot tower. The machine will also be sporting new hardline, an amplifier as well as the new raised antenna. Improved coverage overall is expected. (Phil, W4ACY)

• • •

KNOXVILLE, TENN.—The WA4YON/R 6-meter and 220 mhz. machines are getting a new location on the same mountain range, about one mile from the old location. The new site was developed to relieve an over-crowded tower and some repeater interference problems. The two repeaters were located with the 28-88 W4SKI/R Oak Ridge repeater and a commercial two-way system. The

new site will have a 100-foot Rohn tower and a small equipment box to be used exclusively for Amateur purposes. The tower tip will be at 3410-feet AMSL on Cross Mountain overlooking the Tennessee valley from about 25 miles Northwest of Knoxville. The repeaters are homebrew using Motorola Micor boards. The 220 machine is full duplex using a Stationmaster style antenna and hardline. The 6-meter machine uses 2 different 5/8 ground plains. Increased coverage is expected due to more favorable antenna locations. The open repeaters are on 52.64-53.64 and 222.86-224.46 and can be cross linked by use of a tonepad. Both machines have emergency power. (Sam, WB4HAP)

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WESTERN, S.C.—M.C. McCombs, W4GLZ of Easley plans a wide area coverage repeater in the Western part of South Carolina. No definite site has been chosen as of yet. Frequency allocation will come after a site is chosen. He said he is looking for a mountain top. (Jack, W4YPD)

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RICHMOND-PETERSBURG, VA.—The JOURNAL reported in error last issue that the RATS club of Richmond was planning to install a 70 cm Stationmaster on their repeater 449.85-444.85. The repeater is now owned by an individual in Petersburg and is on the air under the call of WR4BBZ. Excellent coverage is reported from the machine. The new club call for the Richmond group is WR4ACW. (Carter, K4ARO)

• • •

LYNCHBURG, VA.—The K4HGX 449.5-444.5 repeater has been moved to a new higher location and is reportedly giving excellent coverage in that area. (Carter, K4ARO)

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BAMBERG, S.C.—A group headed by Carl Kilgus, WA4DFP is planning a repeater for the Bamberg area. This proposed machine will be a welcome addition to this part of the State since there are few repeaters covering the Bamberg area. Bamberg is located 56 miles South of Columbia. (Jack, W4YPD)

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CHRISTIANSBURG, MARION, VA.—New repeaters are in the works for these two cities. In Christiansburg, the WA4HBC/R machine operates on 885-255, and in Marion, 04-64 is the frequency for the new KA4HEP/R repeater. (Carter, K4ARO)

CHARLOTTE HAM WINS FIRST U.S. FIVE BAND WAZ AWARD

Gary Dixon, K4MQG, a member of the Charlotte Mecklenburg ARS has received the first five band Worked All Zones award to be given in the United States and only the second to be awarded in the world.

The 5-band WAZ, the most difficult of DX awards has only been won by three stations thus far. The first was awarded to ON4UN, and number three went to SM4CAN (Txn HR Report)

NORTH CAROLINA CLUB MEETING CALENDAR

Information Supplied by Clubs

ASHEVILLE - W. Caro. ARS. Bus. 1st Thur., 1930; 2nd Mon. 1930, Various Locations
BENSON - Johnson ARS. 3rd Thur., 1930 at 50-210 Fire Station
BURLINGTON - Alamance ARC. 2nd & 4th Monday 1930, at 230 E. Summit Ave.
BURLINGTON - Alamance Repeater Assoc. Inc. Last Sat. 1900 at B&J Cafeteria
CARY - Cary ARC. 4th Thur. 1930 at White Plains Methodist Church, Activity Bldg.
CHARLOTTE - Mechlenburg ARS. Last Tue. 1930 at Red Cross Bldg. on Park Rd.
CHARLOTTE - Charlotte ARC. 4th Thur. 1900 - Club Building - WSOC-TV Tryon Street
CHARLOTTE - Friday Lunch Group. Fri. 1200 at Mediterranean Rest. on Independence Blvd.
CONCORD - Cabarrus ARS. 3rd Mon. 1930 at Kimball Lutheran Church, Aux. Bldg., Kannapolis
DURHAM - Durham FM Assoc. 2nd Tue. 1800 at Picadilly Cafeteria, So. Sq. S. S.
DURHAM - Triangle Radio Alert Network. 3rd Thur. 1800 at Picadilly Cafeteria, So. Sq. S. S.
REIDSVILLE - Rockingham City ARC. 1st Mon. & 3rd Thur. 1900 at Municipal Bldg.
FAYETTEVILLE - Cape Fear ARS. 3rd Mon. 1900 at Methodist College
FRANKLIN - Franklin ARC. 2nd Thur. 1900 at Macon Savings & Loan Assn.
GASTONIA - Gaston City ARS. 1st Mon. 1900 at Community Room at Eastridge Mall
GREENVILLE - Brightleaf ARC. 2nd Tue. 2000 at Planters Nat. Bank, downtown.
GREENSBORO - Greensboro ARA. 4th Mon. 1830 at Founders Hall, Guilford College
GREENSBORO - Greensboro RC. Fri. 1930 at Club House near Friendship Airport
GREENSBORO - Guilford Am. Soc. (GAS). 2nd Mon. 1830 at diff. restaurants announ. on Repeater
HIGH POINT - High Point ARC. --2nd Tue. 1930 at Student Center, High Point College
HIGH POINT - High Point ARC. Tue. 1930 - Old Mill Rd.
JACKSONVILLE - Onslow ARC. 2nd Tue. 1915 at Carolina Barbecue.
KANNAPOLIS - Cabarrus County ARS. 3rd Mon. 1930 at Kimball Memorial Lutheran Church, Activity Bldg.
LAURINBURG - Scotland County ARS. 1st Wed. at Cablevision Office
LEXINGTON - Healing Springs Mt. VHF Soc. Last Mon. 1930 at Burlington House Furn. Co., Pers. Off.
LUMBERTON - Lumberton ARC. 3rd Thur. 1930 at Robeson County Public Library
MORGANTON - Morganton ARC. 1st Mon. 1930 at W. Piedmont Community College
NEW BERN - New Bern ARC. 3rd Thur. 1930 at Golden Corral Steak House
N. WILKESBORO - Foothills ARC. 1st Tue. 1930 at Fairplains School N. Wilkesboro
RALEIGH - Raleigh ARS. 1st Wed. 1930 at West Community Room, Crabtree Valley Mall
ROCKINGHAM - Rockingham ARC. 1st Thur. at East Rock Fire Dept.
ROCKY MOUNT - Rocky Mount ARS. 3rd Thur. at Golden Corral in Rocky Mount
SALISBURY - Rowan ARS. ?? & 4th Mon. 2000 at Salisbury City Hall, Main Street
SHELBY - Shelby Radio Club. 2nd Mon. 1830 at Hungry Bull Restaurant, Dutch Supper
SILVA - Smokey Mt. ARC. 2nd Tue. 1900 at Southwest Tech. Institute
STATESVILLE - Iredell County ARS. 2nd Thur. 1900 at Agriculture Bldg., Water & Tradd Sts.
WILMINGTON - VHF Society. 2nd Tue., Odd Months, 1930 at Cameron Ed. Bldg., New Hanover Mem. Hosp.
WINSTON SALEM - Forsyth ARC. 2nd Mon. 1930 at Red Cross Building

VIRGINIA CLUB MEETING CALENDAR

Information Supplied by clubs

BLUEFIELD - East River RC. 1st & 3rd Mon. 2030 at Commercial Bank, Bluefield
CHARLOTTESVILLE - Albemarle ARC. 2nd Wed. 1930 at City Courthouse on 4th Street, NE
CHARLOTTESVILLE - University of Virginia ARC. every other Mon. Rm. C119, Thornton Hall
COVINGTON - VHF Communications Assn. 2nd Wed. 1930 at different Members homes
DANVILLE - Danville ARS. 1st & 3rd Fri. 1930 at American Red Cross Bldg., Main St.
FARMVILLE - Southwide ARS. 1st Thur. 1930 at Hampton-Sydney College, Farmville
GALAX - Briarpatch ARC. 1900 at Galax Recreation Center
HAMPTON - Southern Peninsula AR Klub (SPARK). 1st & 3rd Wed. 1930 at VEPCO Building
LYNCHBURG - ARC. 2nd Fri. 2000 at Virginia Baptist Hospital Auditorium
MARTINSVILLE - Patrick Henry ARA. 3rd Tue. 1930 at 1st Nat. Bank of Martinsville and Henry Cty.
NEWPORT NEWS - SPARK. 1st & 3rd Wed. 1930 at VEPCO Building in Hampton
NORFOLK - Hampton Roads Radio Assn. 1st Wed. 1930 at Red Cross Headquarters, Norfolk
NORFOLK - Tidewater ARC. 2nd & 4th Sat. 1000 at Fort Norfolk, Hampton Blvd.
PORTSMOUTH - Portsmouth ARC. 2nd & 4th Thur. 432 Broad Street, Portsmouth
RAPPAHANOCK - ARA. 2nd Tue. Meeting places will be announced monthly.
RICHMOND - Virginia ARA. Last Fri. 2000 at Hermitage Auditorium, Westwood & Hermitage
RICHMOND (RATS) 1st & 3rd Fri. 1930 at the Stone House in Forest Hill Park
RICHMOND - ARC. 2nd Fri. 2000 at the Stone House in Forest Hill Park
ROANOKE - Roanoke Valley ARC. 2nd & 4th Fri. 2000 at Colonial Ave., Presbyterian Church
VIRGINIA BEACH - ARC. 1st Thur. 1900 at Virginia Beach Recreation Center
WINCHESTER - Shenandoah Valley ARC. 1st & 3rd Fri. 2000 at Club Building on Grace St.

WEST VIRGINIA CLUB MEETING CALENDAR

Information Supplied by Clubs

OAK HILL - Plateau ARA. 1st Tue. Bd. of Education, Fayetteville, W. Va.
BLUEFIELD - East River RC. 1st & 3rd Mon. 2030 at Commercial Bank, Bluefield
BECKLEY - Black Diamond ARC. 3rd Thur. in Beckley

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- CLEGG MKIII, HyGAIN 3806, SEARS
- YAESU FT202, VHF. ENGR.
- REGENCY - HRT2,HR2,2A,2B,212,312 (No Sub Band)
- STANDARD - 145,146,826, C118 (No Sub Band)

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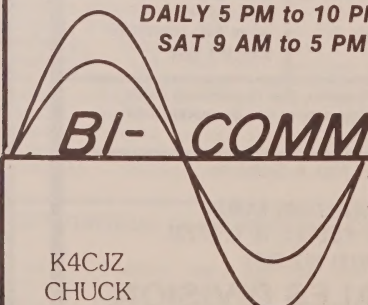
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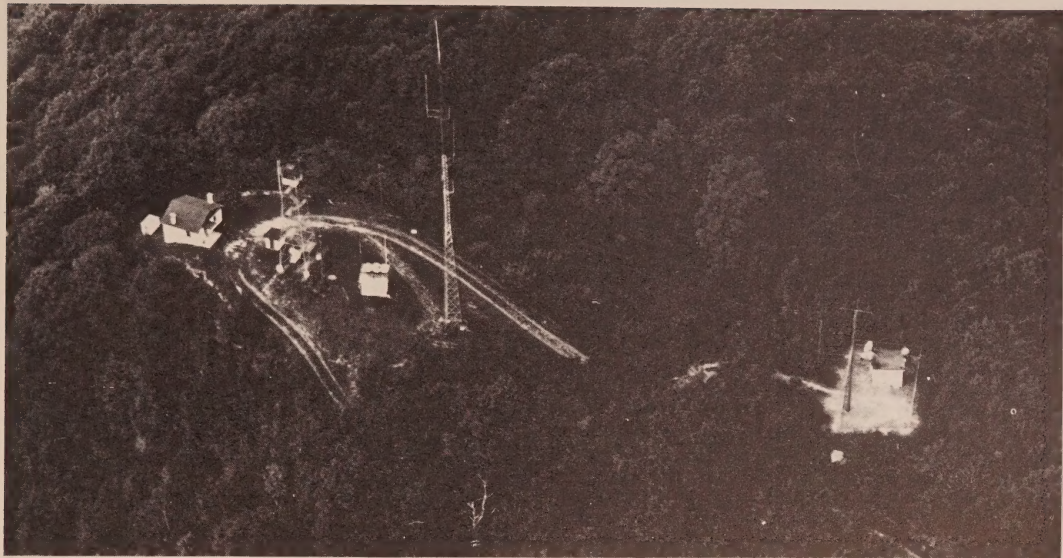
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LICK KNOB from the air. The 3,250-foot mountain top is home of the W8FG/R 87-47 sub band repeater. The new

wide coverage repeater came on the air this past summer. (Photo by Bruce Graham, WB8SLY)

LICK KNOB — NEW REPEATER FOR SOUTHERN WEST VIRGINIA

(Continued From Page 9)

several band openings with a lot of DX work through the machine.

The repeater signal covers the southern third of the Mountain State of West Virginia. During the first two months on the air, the machine has been regularly used by hams from such distant locations as Pomeroy and Marietta, Ohio, and the Moundsville, West Virginia areas. With such excellent coverage to the North, mobile hams traveling Interstates 77 and 79 North of Charleston can easily access the machine. Check-in locations to the West include Huntington, WV and Pikesville, KY. Locations heard from to the South include Richlands, Tasewell, Bluefield, Pearisburg and Wytheville, Va. With only one shaded spot South of Flat Top Mountain, the machine is usable the entire length of the West Virginia Turnpike, I-77, between Bluefield and Charleston. To the East hams have checked in from Rainelle, Rupert and Lewisburg.

Many have been surprised to discover the repeater there in the sub-band. Some have discovered it through use of new full-band scanning rigs.

The repeater is open to all and the KFCARA urges all hams to give the machine a try when in its coverage area.

TWO METERS — A LIFE SAVER!

—By Jim Fitzgerald, K4OJE

Recently Hank Welford, WD4IKD was working on his farm near Hadensville-Gum Spring, Virginia when his tractor flipped over on him, pinning him beneath it.

Hank managed to reach his 2-meter hand held and make an emergency call on the 87-27 KB4GX/R repeater. His cries for help were heard by at least two amateurs who called an ambulance.

Glen Duke, KB4GX also heard the call and rushed to the scene about 7 miles away with a wrecker. Hank's son-in-law, who was with him, obtained help from a neighbor with a front-end loader to lift the tractor and free Hank, just as the Ambulance-Rescue Squad and Glen with wrecker arrived on the scene.

The Rescue Squad took Hank to Chippenham Hospital in Richmond where he received emergency treatment for badly injured arm and numerous bruises and abrasions.

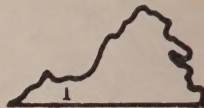
His friends and Glen righted the tractor and secured the premises for Hank after the accident. We are happy to report that Hank is recovering nicely from his accident.

We have found out, repeaters don't have to be busy to have people listening, and they respond in the great Amateur tradition, unselfishly and quickly, displaying another outstanding example of day-to-day personal emergency repeater capabilities.



Briarpatch

Amateur Radio Club



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147.69/09
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NEW AD RATES FOR JOURNAL

The Board of Directors at the August meeting voted to increase Advertising rates in the REPEATER JOURNAL effective January 1, 1981.

Some of the Dealers contacted felt the new rates were not prohibitive and were still in line considering the circulation of the JOURNAL and one of the few established advertising vehicles available in this part of the country which gets measured results.

A complete list of the new advertising rates may be found in this issue of the Journal. In brief, rates went up about \$5.00 for each size ad above the old non-contract price. In addition, there are no volume discounts, or contract discounts. Dealers can if they wish be billed quarterly and pay quarterly instead of for the entire year if they wish to advertise on contract.

It was also brought out, that since we had suffered a couple of losses from advertisers not paying their bills, or going out of business and not paying their bills, the JOURNAL Advertising Manager was instructed not to allow any advertiser to run additional ads in the Journal if his bill is not paid up prior to deadline.

Reason for the increases were to partially offset the cost increases of publishing the Journal. Our printer has held the line costs as much as they could for us, but with paper prices zooming through the ceiling, we had to absorb price increases almost every edition of the Journal.

Advertisers with any questions about the new pricing structure should contact Ken Holiday, WA4DYY, Journal Advertising Manager. His address and phone number is on Page one of the Journal. Advertisers are encouraged to carefully read the rate structure and rules which we have published in this issue of the Journal.

FLYING HI (JACKED) — MOBILE DEFINITELY NOT THE WAY TO GO

—by Jack Watson, W4YPD

Jim Robb, WA4KXO of Chapin, S.C. took an unexpected trip a few weeks ago.

While returning to Columbia for a business trip, he was on the airplane that was hijacked to Cuba. The interesting thing about the whole deal, Jim is head of maintenance (In Columbia) for the airline which was skyjacked, where he had just come from Ft. Lauderdale, Fla. and was hitching a ride on this particular plane.

Jim, who works for Delta, was heard on all the local repeaters and others from the plane as he described what happened. "While all the people remained calm and it all worked out all right," Jim said, "I certainly don't want to have such an experience again."

UNUSUAL NEWS ITEM?

A few days ago, I received a letter from Louisville, KY asking for advice for a repeater frequency pair in the two meter band for Louisville, KY!! It seems they had been advised to do this ARRL!!

I answered, first describing how CVRA was structured and what it did.

I informed the writer that the nearest CVRA represented territory was Tennessee, so accordingly, I was forwarding his request to the current acting director for Tennessee who would be best qualified to advise on their request. A few days later, while working OSCAR 7-B, I was called by a Louisville station and when during the QSO I mentioned that I recently sent a letter to some amateur operator in that city concerning repeater information, he replied that the same amateur was sitting next to him and that they were going to hold a repeater club meeting that night and my letter would be read to the group!!

Observations: (a) We are not (yet) as large as ARRL thinks; (b) I wonder if this is the first time that receipt of a CVRA letter has been confirmed via satellite?

—Al Ross, K4CAW

B. F. GOLDBERG & ASSOCIATES, ENGRS.

Consultants in Acoustics & Electronics

BARNETT F. GOLDBERG, P.E., PRESIDENT

Engineering Expertise & Testimony

- Radio Frequency Interference (EMI)
- Traffic & Community Noise
- Mechanical Vibration
- Electrical, Radio & TV Phenomena
- Power & Telephone Line Right-of-Way

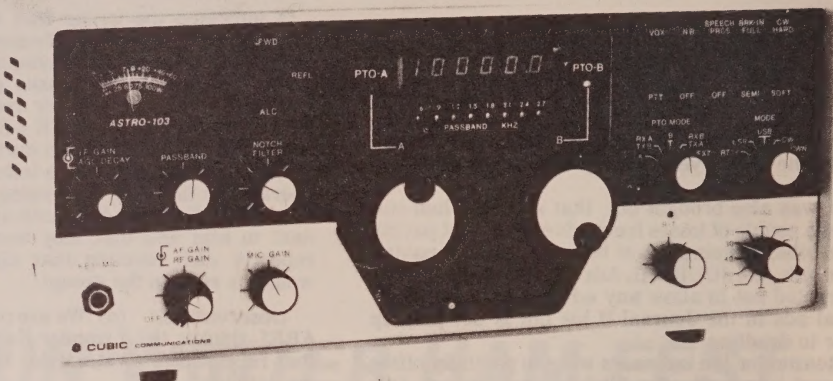
3830 FOREST DRIVE
COLUMBIA, S.C. 29204

TELEPHONE (803) 767-6944

F & M PRESENTS THE NEW ASTRO-103 HF/SSB

ALL BAND COVERAGE!
160 THROUGH 10, INCLUDING WARC
9 BANDS FULLY OPERATING

ASTRO 103 Professional Grade
HF/SSB Transceiver



THE NO NONSENSE RIG STRESSING PERFORMANCE!

Quality American design and construction by Cubic Corporation. For 29 years Cubic has been a leading diversified American defense and commercial contractor—your assurance of the resources and stability required for future product support.

FEATURES

- ✓ All band coverage from 160M through 10M. 9 bands in 12 ranges.
- ✓ DUAL PTO's. Two independent high stability permeability tuned oscillators provide true split band operation (Infinite memory!) The digital counter reads the PTO used in receive and then switches to the transmit frequency selected when the mic is keyed.
- ✓ 235 WATTS INPUT, PEP AND CW on all frequencies. ALL SOLID STATE with a highly effective ALC circuit for output device protection.
- ✓ IF PASSBAND TUNING not to be confused with ineffective "IF shift." Two 8-pole crystal filters are cascaded to provide a 16-pole -6 to -100dB shape factor of 1.4:1! One filter may be moved through the passband to provide a continuously variable bandwidth with the 16-pole razor sharp cut-off at the low or high end to eliminate close-in interference above or below the operating frequency.
- ✓ CW CRYSTAL FILTER (Optional). A 400Hz 6-pole crystal filter is cascaded with one of the 8-pole filters in the CWN position and may be moved across the base filter with the Passband Tuning

Control! This provides truly effective CW filtering for the most discriminating CW operator.

- ✓ VISUAL DISPLAY OF PASSBAND provided by a series of 8 LED's calibrated from .6 to 2.7 kHz. Shows passband in use at a glance!
- ✓ External Receive Antenna Jack. Allows separate transmit and receive antennas.
- ✓ TUNABLE NOTCH FILTER to drastically reduce QRM. When combined with passband tuning provides the ultimate in removing interference.
- ✓ FULL OR SEMI CW BREAK-IN provides full flexibility for the CW professional.
- ✓ RTTY Mode Switch. Automatically selects LSB and switches in CWN filter.
- ✓ CONTINUOUSLY VARIABLE AGC DECAY will allow setting the AGC hold time from 0 to several seconds. "Woodpecker" interference can be drastically reduced by setting the AGC delay to a point near minimum value.
- ✓ EXCEPTIONAL DYNAMICS with AGC range of greater than 100dB and THIRD ORDER INTERCEPT OF +15dBm.
- ✓ SPEECH PROCESSOR with extremely low distortion increases transmitter sig-

nal by at least 1/2 "S" unit in effective audio "punch." Compression level is adjusted with the Mic Gain Control.

- ✓ RF and IF GAIN CONTROLS to provide an infinite selection of receiver dynamics in the presence of high level interference.
- ✓ 4 FUNCTION METER reads "S" units in receive, and selects forward power (calibrated in watts PEP), reflected power, or ALC level in transmit. NO EXTERNAL VSWR METER REQUIRED!
- ✓ BAND SELECTION using PLL and synthesizer for band selection provides full coverage of 160 meters through 10 meters in 9 ranges.
- ✓ MILITARY QUALITY PC BOARDS of double sided, plated through glass epoxy material. Not the inferior paper base phenolic material seen in imported equipment.
- ✓ MODULAR CONSTRUCTION WITH PC boards and assemblies interconnected by plug-in strip line and coaxial connectors for uniformity and ease of service. NO CABLE HARNESS USED! Chassis and cabinet are of rugged steel construction for durability and superior shielding.

TRANSCEIVER

ASTRO-103 TECHNICAL SPECIFICATIONS

GENERAL

Frequency Range:*

160M Band	1.8- 2.0	MHz
80M Band	3.5- 4.0	MHz
40M Band	7.0- 7.5	MHz
30M Band	10.0-10.5	MHz
20M Band	14.0-14.5	MHz
17M Band	18.0-18.5	MHz
15M Band	21.0-21.5	MHz
12M Band	24.5-25.0	MHz
10M Band	28.0-29.999	MHz

*Approximately 50 to 100 kHz
Overrange on Each Band

Frequency Control:

Two high stability independent
PTO's (permeability tuned
oscillators) double shielded and
switchable

Frequency Readout:

Six digit LED from internal counter

Passband Display:

8 LED "dots" depicting passband
width and position from 0.6 to
2.7 kHz

Frequency Stability:

Within 100 Hz during any 30 minute
period after warm-up.

Modes:

USB/LSB/CW/CWN/RTTY
(CWN requires optional CW Filter)
Full or Semi Break-in on CW
In RTTY Mode LSB and the Narrow
Filter are automatically selected.

Power Requirements:

13.6 VDC (11-15 VDC range) at
1.8 amps Receive; 19 amps peak
Transmit

Input/Output Impedance:

50 ohms unbalanced

RECEIVER

Sensitivity:

$$.35\mu\text{V for } 10\text{dB } \frac{S+N}{N}$$

Selectivity: (normal)

16 pole crystal filtering 2.7 kHz at
-6dB; 3.78 kHz at -100dB.
Shape factor 1.4:1

Selectivity (Passband Tuning):

Continuously variable width and
position. One 8 pole filter may be
moved in cascade through the
passband of a second 8 pole filter to
provide a 16 pole cut-off at the high
or low end of the passband. Width
and position indicated by LED's

Selectivity (CWN)—Optional

With the optional 6 pole 400 Hz
bandwidth filter replacing the
moveable filter, the equivalent of a
14 pole filter is obtained which may
also be moved through the 8 pole
base passband by the Passband
Tuning Control.

Notch Filter:

Provides 30dB typical notch
attenuation from .4 to 3.0 kHz

Noise Floor:

Typically -132dBm

Dynamic Range

AGC dynamic range greater than
100dB

Specifications subject to change without notice.

Third Order Intercept

Better than +15dBm

Image Rejection:

Better than 70dB

IF Rejection:

Better than 60dB

Noise Blanker:

Sophisticated impulse type with
independent AGC and FET blanking
gate. Adds no undesirable cross
modulation when operating.

R.I.T. (Receiver Incremental Tuning):

Provides receiver shift of
approximately ± 1.5 kHz
independent of transmitter.

Metering:

"S" units 1 to 9 and to +60dB
above S9 (S9 = 50 μ volts)

AGC Decay:

Continuously variable hold time from
zero to several seconds

Gain Set:

Both RF and IF gain controls
provided. Continuously variable to
greatly improve dynamics in
presence of high level interference.

TRANSMITTER

RF Input Power:

235 watts all modes, all bands

RF Output Power:

100 watts all bands all modes—
limited by ALC to 100 watts PEP or
CW

Duty Cycle:

100% for voice or CW. 50% for RTTY
or facsimile unless small external
blower used.

VSWR Shutdown:

Full power up to VSWR = 1.7:1
Approximate limit rates as follows:

VSWR	Percent Power
1.5	100%
2.0	80%
3.0	60%
>	25%

Full protection for output devices

Carrier Suppression:

Better than 50dB

Sideband Suppression:

Better than 60dB

Harmonic and Spurious Suppression

45 to 60dB

Third Order Distortion Products:

Better than 34dB down

Metering:

Forward power in watts, PEP
Reflected power in watts PEP + 10
ALC

Speech Compression:

Up to 12dB. Compression level set
by Mic Gain Control

CW Shaping:

Switch selectable. Approximately
5ms rise and decay in "SOFT"
position 1.0ms in "HARD" position

VOX-PTT:

Internally adjustable

Audio Frequency Response:

300-3000 Hz

Microphone Impedance

47K ohms

PHYSICAL

Controls:

Power On/Off/AF Gain/RF Gain
IF Gain/ACG Decay
Passband Tuning
Mic Gain
Notch Filter
Meter Selector FWD/REFL/ALC
PTO Tuning A and B
PTO Mode, A, B, or AB or BA, or
EXT
RIT
MODE
Band Switch
VOX/PTT
NB—On/Off
Speech Processor On/Off
CW Break-in, full or semi
CW pulse, Hard or Soft
Indicators:
LED Frequency Readout
PTO in use indicators
Passband width and position
indicators
RIT "on" indicator

Front Panel Connector:

MIC/KEY (phone jack)

Rear Panel Connectors:

13.6 VDC input
External Relay (linear keying) RCA
Key jack, RCA jack
External modulation RCA jack,
for RTTY
External LO, RCA jack
Fuse
Antenna Connector, UHF type
External Speaker, phone jack
Ground Lug
Receiver Antenna Switch—
Ext. Normal
Ext. Receive Antenna, RCA jack

Dimensions:

14.25" (36.2 cm) W, x 6.375"
(16.2 cm) H, x 13.25" (33.7 cm) D

Weight:

23.5 pounds (10.6 kg)

ENVIRONMENT

Temperature Range:

Operating: -20°C to +50°C
Storage: -30°C to +70°

Humidity:

95% non-hydroscopic glass epoxy
boards

Shock and Vibration:

Meets all applicable EIA
specifications for vehicular
environment

ACCESSORIES

PSU-6A Power Supply with Speaker

Provides 13.6 VDC at 20A peak
regulated output from 115/230 VAC,
50/60 Hz at 6A/3A peak AC input.
Height and color scheme to match
transceiver

COMPATIBLE PRODUCTS

- ST-2B Antenna Tuner (2 kw)
- ST-3B Antenna Tuner (200 watts)
- 1500ZA 1500 watt Linear Amplifier

F & M ELECTRONICS

3520 ROCKINGHAM ROAD
GREENSBORO, N.C. 27407
PHONE (919) 299-3437

CVRA NET REGISTER

(Local Times Indicated)

TWO METERS - FM

ANDERSON SC	37/97	WR4AIO
ASHEVILLE NC	16/76	WA4BVW
ASHEVILLE NC	16/76	WA4BVW
BECKLEY WV	25/85	WR8AKZ
BENSON NC	87/27	WR4ARL
BLUEFIELD VA	4.89/5.49	WD4RPT
BURLINGTON NC	07/67	WR4AKY
CATAWBA COUNTY NC	82/82	
CHARLOTTE NC	34/94	WR4AEU
CHERAW SC	735/135	WD4AHEH
DANVILLE VA	10/70	WR4BDN
DILLON SC	52/52	
DORCHESTER SC	78/18	W4NAT
DUBLIN VA	78/18	WB4UOZ
DURHAM NC	34/94	WR4BEK
DURHAM NC	34/94	WR4BEK
FAYETTEVILLE NC	31/91	WR4ANN
FAYETTEVILLE NC	31/91	WR4ANN
FLORENCE SC	37/97	WR4AOM
FOREST VA	705/105	WB4JBU
GREENSBORO NC	16/76	WR4AOD
GREENSBORO NC	63/03	WD4IPZ
GREENVILLE NC	52/52	
GREENVILLE SC	01/61	WR4AOG
GREENWOOD SC	765/165	WR4AUE
GRIFFON NC	16/76	WR4ABP
HIGH POINT NC	16/76	WA4ZXA
KILMAR/SALUDA VA	93/33	WA4UAF
JACKSONVILLE NC	40/00	WD4FVO
KNOXVILLE TN	90/30	W4B8B
LAFOLETTE TN	07/67	W4TZG
LANCASTER SC	10/70	WC4AAW
LAURENS SC	25/85	WA4UZA
LAURINBURG NC	025/625	WR4A0X
LEXINGTON SC	7235/6835	WR4AGK
LUMBERTON NC	96/36	WR4BDQ
LYNCHBURG VA	01/61	WR4AXO
MANTED NC	34/94	W4PCN
MORGANTON NC	75/15	WR4AQI
MYRTLE BEACH SC	01/61	WA4KGN
NEW BERN NC	01/61	WB4JMS
NEWBERRY CTY SC	52/52	KB4CO
N. WILKESBORO NC	22/82	WB4PZA
N. AUGUSTA SC	13/73	WR4ABB
OAK HILL WV	19/79	WD800J
OAK RIDGE TN	22/82	WB40AH
OAK RIDGE TN	28/88	W4SKH
ORANGEBURG SC	69/09	WR4AOY
RALEIGH NC	04/64	WR4ACE
RALEIGH NC	28/88	WR4AOD
REIDSVILLE NC	25/85	K4YFT
ROANE CTY TN	72/12	K4EAT
ROANOKE VA	385/985	WR4AFY
SALISBURY NC	13/73	WR4AAA
SUMTER SC	04/64	WR4AOI
SUMTER SC	615/015	WD4ECQ
TADWELL VA	75/15	WA4QKH
TIDEWATER AREA VA	37/97	WA4KXV
WHITE HALL SC	31/91	WR4AQT
WINCHESTER VA	22/82	WR4AGT
WINSTON-SALEM NC	04/64	WA4GIC

TWO METERS

APPOMATTOX VA	144.25
GREENSBORO NC	144.25
GREENVILLE SC	144.25

1 1/4 METERS (220 Mhz) FM

EASLEY SC	2.46/4.06	W4FHU
HILLSBOROUGH NC	2.34/3.94	WA4WTX

SIX METERS

CHARLOTTE NC	50.40
CLEMSON SC	50.125
RICHMOND VA	50.25

450 MHZ

RALEIGH NC	432.09
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ANDERSON RADIO CLUB NET	DAILY	2130
YL NET	THU	2030
WESTERN NORTH CAROLINA TFC NET	TUE	2030
BLACK DIAMOND ARC NET	MON	2100
JOHNSON ARS NET	DAILY	1930
TWIN STATE EMERG. NET	TU-TH	1900
ALAMANCE COUNTY ARES NET	MF	2100
CATAWBA COUNTY RACES NET	MON	1900
METROLINA 2-METER EMERG. NET	DAILY	2100
CHESTERFIELD COUNTY ARS NET	TUE	2030
LAST CAPITOL SERVICE NET	TTHSN	2030
DILLON CO. ARC NET	MON	1830
DORCHESTER AREC/RACES NET	1ST M	
NEW RIVER VALLEY ARC NET	SUN	2100
TRIANGLE RADIO ALERT NET	DAILY	2030
POSSUM TROT NET	MF	0630
POSSUM TROT NET	MF	0630
CAPE FEAR ARS NET	DAILY	1900
FLORENCE 2-METER NET	MON	2000
VA. TELETYPE SOC. RTTY NET	MON	2000
CVRA NEWS NET	WED	2030
GARS TUE 2100, ARES THU 2100, CODE DY	2030	
BRIGHTLEAF ARS NET	TUE	2100
BLUE RIDGE ARPSC NET	TUE	2100
ABBEVILLE-GREENWOOD EMERG. NET	TUE	2200
ENC EMERGENCY NET	THU	2100
HIGH POINT ARC-ARES NET	THU	2000
RAPPAHANOCK ARA CLUB NET	4TH TUE	2100
CAMPBELL CO 2-MTR EMERG. NET	WED	2100
MIDEASTERN TENN EMERG. NET	M-F	2100
CAMPBELL CO 2-MTR EMERG. NET	TTHSN	1900
LANCASTER CO. NET	SUTH	2030
LAURENS COUNTY ARES NET	SUN	2030
SAND HILLS EMERGENCY NET	DAILY	1930
LEXINGTON CO RACES NET	WED	2100
LUMBERTON CO NET	MF	2030
LYNCHBURG TWO METER FM-NET	TUE	1900
FESSENDEN ARC NET	WED	2000
W. PIEDMONT VHF NET	WED	2100
GRAND STRAND 2-METER NET	WED	2100
NEW BERN ARC NET	TUES	2000
NEWBERRY COUNTY ARS NET	WED	2100
FOOTHILLS RACES NET	MON	2100
STATELINE NET	LAST SUN	2000
PLATEAU ARA NET	FRI	2000
EAST TENN HOSP NET	TUE	2000
ANDERSON COUNTY ARES NET	MON	1900
VHF NET	TUE	1900
RARS NET	DAILY	2000
PIEDMONT COASTAL TFC NET	DAILY	2100
ROCKINGHAM CTY. ARC NET	TUE	2100
ROANE COUNTY ARES NET	THU	2000
ROANOKE VALLEY ARC NET	WED	2000
CENT. NORTH CAROLINA TFC. NET	DAILY	2200
SUMTER RPTR. ASSN 2-METER NET	MON	2130
SARA-2 METER NET	MON	2100
TRI-COUNTY 2-METER NET	SUN	2000
STARES NET (S. TIDEWATER ARES)	M-F	2100
COASTAL ARA 2-METER NET	THU	2100
SHENANDOAH VALLEY SERVICE NET	DAILY	1915
FORSYTH COUNTY AREC/RACES NET	WED	2100

VIRGINIA SSB NET	THU	2200
NORTH CAROLINA S.W.O.T.	TUE	2100
SOUTH CAROLINA S.L.O.T.	M-TH	2100

ALAMOUNT ARC 220 NET	MON	2030
PIEDMONT 220 NET	TTH	2100

CHARLOTTE HORNET NET (AM)	SUN	2100
DIXIE NET (SSB)	W,SN	2100
CENTRAL VIRGINIA NET (AM)	DAILY	1900

N.C. STATE CLUB NET	WED	2100
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The By City Index Appears
On Following Pages

TWO METERS

4.51 / 5.11	HIGH POINT	NC
	KNOXVILLE	TN
4.53 / 5.13	HODGES	SC
	GALAX	VA
4.57 / 5.17	BUTNER	NC
	MORGANTON	NC
4.59 / 5.19	WINSTON-SALEM	NC
4.61 / 5.21	GASTON	SC
	BUFFALO MT	VA
4.63 / 5.23	CHARLOTTE	NC
4.65 / 5.25	GREENSBORO	NC
	MT PISGAH	NC
4.69 / 5.29	TRINITY	NC
4.70 / 5.30	BRYSAN CITY	NC
4.71 / 5.31	ROCK HILL	SC
4.73 / 5.33	MT AIRY	NC
	PASIEHS	WV
4.75 / 5.35	CHARLOTTE	NC
	BLAND	VA
	FRONT ROYAL	VA
4.77 / 5.37	N. WILKESBORO	NC
4.79 / 5.39	SAURATOWN MT	TN
	CHATTANOOGA	TN
4.81 / 5.41	LEXINGTON	NC
	WILLIAMSTON	NC
4.83 / 5.43	NEWTON	NC
	ALEXANDRIA	VA
	GALAX	VA
	MORGANTOWN	WV
4.85 / 5.45	CHARLOTTE	NC
	LINCOLNTON	NC
	NEWPORT	NC
	OAK RIDGE	TN
	WELCH	WV
4.87 / 5.47	LILLINGTON	NC
	KINGSTON/LICK KB	WV
4.89 / 5.49	RALEIGH	NC
	HENDERSOINVILLE	TN
	MEMPHIS	TN
	BLUEFIELD	VA
	BLUEFIELD	WV
5.93 / 7.93	BUCKHANNON	WV
6.01 / 6.61	GREENSBORO	NC
	NEW BERN	NC
	GRNVLE/CSRS HD	SC
	MYRTLE BEACH	SC
	CHATTANOOGA	TN
6.01 / 7.51	MEMPHIS	TN
6.01 / 6.61	NASHVILLE	TN
	BRUMLEY MT	VA
	LYNCHBURG	VA
	VIRGINIA BEACH	VA
6.01 / 6.01	SPENCER	WV
6.025/6.625	HENDERSOINVILLE	NC
	LAURINBURG	NC
	NEW MARKET	VA
6.04 / 6.64	HENDERSOINVILLE	NC
	RALEIGH	NC
	WINSTON-SALEM	NC
	SUMTER	SC
	MADISON	TN
	MEMPHIS	TN
	MARION	VA
	RICHMOND	VA
	ELKINS	WV
	HUNTINGTON	WV
6.055/6.655	CONCORD/KANNAP.	NC
6.055/6.665	ALEXANDRIA	VA
6.07 / 6.67	BURLINGTON	NC
	FOREST CITY	NC
	MYRTLE BEACH	NC
	COLUMBIA	SC
	BRISTOL	TN

DISTRIBUTION OF REPEATERS BY FREQUENCY

6.07 / 6.67	COOKEVILLE TN	COVE MTN TN	6.43 / 7.03	ROCK HILL SC	DUBLIN VA
	LAFOLLETTE TN	MEMPHIS TN	6.445/7.045	HOPE MILLS NC	PETERSBURG VA
	NASHVILLE TN	NASHVILLE TN		ROBBINSVILLE NC	LAKE TOWAWAY NC
	BARREN SPRINGS VA	PORTSMOUTH VA	6.46 / 7.06	CHARLOTTE NC	GREENSBORO NC
	BRISTOL VA	BKLY/FLAT TOP MT WV		ELIZABETH CITY NC	GREENVILLE NC
	LEXINGTON VA	6.25 / 7.85		MEMPHIS TN	LITTLE MT SC
	WILLIAMSBURG VA	6.265/6.865		SOUTH BOSTON VA	COOKEVILLE TN
6.085/6.685	RAVENSWOOD WV	6.28 / 6.88		PRINCETON WV	JACKSON TN
	GRIFTON NC		6.475/7.075	BURLINGTON NC	HIGH KNOB VA
	STATESVILLE NC		6.49 / 7.49	AHOSKIE NC	MCLEAN VA
	ALEXANDRIA VA		6.655/6.055	BROWNSVILLE TN	7.825/7.225
6.085/7.955	MORGANTOWN WV			UNION CITY TN	HILLSBOROUGH NC
6.10 / 6.70	DUNN NC		6.685/6.085	WAVELY TN	MORRISTOWN TN
	GREENVILLE SC		6.715/6.115	PULASKI TN	EDEN NC
	LANCASTER SC		6.745/6.145	NEWBERN SC	FRANKLIN NC
	GREENEVILLE TN		7.255/6.835	LEXINGTON TN	PINE BLUFF NC
	MANCHESTER TN		7.30 / 7.90	MONROE NC	SHELBY NC
	MEMPHIS TN		7.60 / 7.00	HIGH POINT NC	COLUMBIA SC
	UNION CITY TN			BRISTOL TN	GALLITIN TN
	DAN/WHT.OAK MT VA	6.31 / 6.91		CHATTANOOGA TN	MEMPHIS TN
	NORFOLK VA			CLARKSVILLE TN	PETERSBURG VA
6.115/6.715	SPRING LAKE NC		7.615/7.015	TERRA ALTA WV	WOODBURGE VA
6.115/7.715	BLACKSBURG VA			SUMTER SC	7.855/7.255
6.115/6.715	STERLING NC			NASHVILLE TN	ASHEBORO NC
6.13 / 6.73	RALEIGH VA		7.63 / 7.03	FREDRICKSBURG VA	CHRISTIANSBURG VA
	SALISBURY NC			GREENSBORO NC	SHEMANSOAH VA
	WILMINGTON NC			ROANOKE RAPIDS NC	MARTINSBURG WV
	N. AUGUSTA SC			FAVETTEVILLE TN	BENSON NC
	KNOXVILLE TN	6.31 / 6.91		HENDERSONVILLE TN	GASTONIA NC
	LEBANON TN			MEMPHIS TN	WAYNESVILLE NC
	MEMPHIS TN			MORRISTOWN TN	CHARLESTON SC
	HAMPTON VA			SPRINGFIELD TN	LONG MT SC
	ALDERSON WV			WAYNESBORO VA	JOHNSON CTY TN
6.145/6.745	DILLON SC			MULLENS WV	MEMPHIS TN
6.16 / 6.76	ASHVL/MT PISGAH NC	6.325/6.925	7.645/7.045	ELLIS KNOB VA	NASHVILLE TN
	GREENSBORO NC			VIRGINIA BEACH VA	GUM SPRINGS VA
	GRIFTON NC	6.34 / 6.94	7.66 / 7.06	VIRGINIA BEACH VA	SCOTT DEPOT WV
	CHARLESTON SC			MACO NC	LYMAN NC
	COLUMBIA SC			SUMTER/SHAW SC	MARTINSVILLE VA
	BRISTOL/HLSTN MT TN			GREENEVILLE TN	GASTONIA NC
	NASHVILLE TN			SHELBYVILLE TN	JACKSONVILLE NC
	CHARLOTTESVILLE VA			RICHMOND VA	SYLVIA NC
	FOREST VA		7.67 / 7.09	MEMPHIS TN	TUCKASEGEE NC
	EAST RIVER MTN* WV		7.675/7.075	GREENVILLE SC	KNOXVILLE TN
	HUNTINGTON WV			KNOXVILLE TN	MEMPHIS TN
	MORGANTOWN WV		7.69 / 7.09	CRIMORA VA	NASHVILLE TN
	WHEELING WV			GREENVL/ESTN NC	BERRYVILLE VA
6.175/6.775	ELIZABETHTOWN NC			HAYESVILLE NC	CLIFTON FORGE VA
6.19 / 6.79	LEVEL CROSS/GBO NC			ORANGEBURG SC	FRANKLIN VA
	ANDSN/SASFRAS MT SC			SPARTANBURG SC	GRUNDY VA
	CHARLESTON SC			SPARTA TN	HUNTINGTON WV
	SWAINSBORO(GA) SC		7.705/7.105	BRIARPATCH MT VA	PENNSBORO WV
	CHATTANOOGA TN	6.355/6.955		MONROE NC	7.915/7.315
	JOHNSON CTY TN	6.37 / 6.97	7.72 / 7.12	JOHNSONS MT VA	UNION CROSS NC
6.19 / 7.51	MEMPHIS TN			BRIDGEPORT WV	ALEXANDRIA VA
6.19 / 6.79	NASHVILLE TN		7.72 / 7.12	GAST/SPCR MT NC	7.93 / 7.33
6.19 / 6.79	CHESAPEAKE VA			ROCKY MOUNT NC	FAYETTEVILLE NC
	FAIRFAX VA			WYRTLE BEACH SC	LENOIR NC
	OAK HILL WV			N. AUGUSTA SC	COLUMBIA SC
6.205/6.805	GASTONIA NC			COLUMBIA TN	TOCCOA(GA) SC
	WASHINGTON NC			MEMPHIS TN	CROSSVILLE TN
6.22 / 6.82	DURHAM NC		7.735/7.145	OAK RIDGE TN	COLE MTN VA
	ROARING GAP NC		7.735/7.135	ALEXANDRIA VA	KLMNRK/SALUDA NC
	WILMINGTON NC		7.75 / 7.15	CULPEPPER VA	SHELBY NC
	GRNVLE/PARIS MT SC			BRIDGEPORT WV	NASHVILLE TN
	LYONS(GA) SC			CHIMNEY ROCK NC	GATE CITY VA
	LAKE CITY TN			CHERAW SC	7.95 / 7.35
	MEMPHIS TN			MORGANTOWN NC	7.96 / 7.36
	WINCHESTER TN	6.385/6.985		RALEIGH NC	DOONE NC
	WINCHESTER VA			MEMPHIS TN	FRANKLIN NC
	CHARLESTON WV	6.40 / 7.00		NASHVILLE TN	GREENVILLE NC
	CLARKSBURG WV			PARKERSBURG WV	LUMBERTON NC
6.235/6.835	ASHEVILLE NC		7.765/7.165	OAK RIDGE TN	COLUMBIA SC
	WADESBORO NC			TAZEWELL VA	MEMPHIS TN
	DANTE VA	6.40 / 7.54		GREENWOOD SC	PARIS TN
	HAZEL MT VA	6.40 / 7.00		BLUE RIDGE VA	PARKERSBURG WV
6.25 / 6.85	GOLDSBORO NC		7.78 / 7.18	WARRENTON VA	BURNSVILLE NC
	HICKORY/BRT. MT NC			MT AIRY NC	NASHVILLE TN
	REIDSVILLE NC	6.415/7.015		SANFORD NC	STAUNTON VA
	FLORENCE SC			CAROWINDS SC	CHARLOTTE NC
	LAURENS SC			DORCHESTER SC	EDEN NC
	SUMMERVILLE SC		7.78 / 7.17	CLEVELAND TN	DAYTON/RHEA CTY TN
	ALCOA TN	6.43 / 7.03	7.78 / 7.18	PETERSBURG TN	JONESBORO TN
				NASHVILLE TN	MEMPHIS TN
					NASHVILLE TN
					PETERSBURG VA
					MEMPHIS (MARS) TN

NORTH CAROLINA REPEATERS

TWO METERS

AHOSKIE	WR4AFB	146.31	146.91	N	PA
AHOSKIE	WB4YNF	146.49	147.49		AT
ALBEMARLE	WR4BBX	146.385	146.985		
ASHEBORO	WR4AOE	147.855	147.255		PA
ASHEVILLE	WA4QCO	146.235	146.835		
ASHEVILLE	WA4QCO	146.34	146.94	N	
ASHVL/MT PISGAH	WA4BVW	146.16	146.76		
ASHVL/SPVY MT	WB4PLA	146.31	146.91		A
BENSON	WR4ARL	147.87	147.27	N	PA
BOONE	WB4DYD	147.96	147.36		PA
BRYSON CITY	K4BBF	144.70	145.30	N	P
BURGAW	K4LZY	146.34	146.94		
BURLINGTON	WR4AKY	146.07	145.67	N	
BURLINGTON	W4VGZ	146.475	147.075		EA
BURNSVILLE	WA4LLR	147.975	147.375		
BUTNER	WA4IZG	144.57	145.17	N	P
CHARLOTTE	WR4AEU	144.63	145.23		P
CHARLOTTE	WB4HTR	144.75	145.35	N	P
CHARLOTTE	WB4LCF	144.85	145.45		
CHARLOTTE	WR4AEU	146.34	146.94		A
CHARLOTTE	WR4ALO	146.46	147.06	N	A
CHARLOTTE	WB4KOH	147.99	147.39		PA
CHIMNEY ROCK	WA4KNI	147.735	147.145	N	P
CONCORD/KANNAP.	K4CEB	146.055	146.655	A	
DUNN	WB4FXM	146.10	146.70		
DURHAM	WA4WTF	146.22	146.82		
DURHAM	WA4BFT	146.34	146.94		A
DURHAM	W4PVI	146.415	147.015	N	L
EDEN	WA4ACP	147.84	147.24	N	
EDEN	WD4DIP	147.99	147.39		
EDENTON	WA4JOK	147.99	147.39	N	C
ELIZABETH CITY	WA4VTX	146.46	147.06	N	A
ELIZABETHTOWN	W4DCD	146.175	146.775	N	P
ERWIN	WR4ALY	146.43	147.03	N	
FAYETTEVILLE	WR4ANN	146.31	146.91		A
FAYETTEVILLE	W4LPL	147.93	147.33		
FOREST CITY	WR4AHA	146.07	146.67	N	A
FRANKLIN	WB4YAO	147.84	147.24		
FRANKLIN	N4AC	147.96	147.36	N	
GAST/SPCR MT	WR4ATP	147.72	147.12		A
GASTONIA	K4ZFD	146.205	146.805	N	L
GASTONIA	WD4KGM	147.87	147.27	N	
GASTONIA	WR4	147.90	147.30	N	P
GOLDSBORO	K4CYP	146.25	146.85		A
GREENSBORO	KZ4O	144.65	145.25	N	C
GREENSBORO	K4SNI	146.01	146.61		A
GREENSBORO	WR4AOD	146.16	146.76		A
GREENSBORO	WD4IPZ	147.63	147.03	N	
GREENSBORO	WR4ANL	147.81	147.21	N	
GREENVILLE	WD4JPP	147.81	147.21	N	P
GREENVILLE	W4AMC	147.96	147.36		
GREENVL/ESTN NC	W4GDF	147.69	147.09		
GRIFFON	W4NBR	146.085	146.685		C
GRIFFON	WR4ABP	146.16	146.76		
HAYESVILLE	WD4KTG	147.69	147.09		
HENDERSONVILLE	WB4YAO	146.025	146.625		P
HENDERSONVILLE	WB4YAO	146.04	146.64		L
HICKORY/BRT. MT	WR4ACM	146.25	146.85	N	

HIGH POINT	N4XO	144.51	145.11		P
HIGH POINT	WA4ZXA	146.265	146.865		PA
HIGH POINT	K4AZA	146.40	147.00		PA
HIGH POINT	K4AZA	147.60	147.00		PA
HILLSBOROUGH	WA4WTX	147.825	147.225		A
HOPE MILLS	WA4DEG	146.445	147.045	N	P
JACKSONVILLE	WD4FVO	146.40	147.00		
JACKSONVILLE	WR4ATW	147.90	147.30		
KINGS MTN	WR4AYN	146.37	146.97		
LAKE TOXAWAY	WR4AGH	147.795	147.195		
LAURINBURG	WR4AOX	146.025	146.625		
LENOIR	WR4ARG	147.93	147.33		
LEVEL CROSS/GB0	K4VUW	146.19	146.79		
LEXINGTON	WD4NTE	144.81	145.41	N	P
LEXINGTON	K4IZM	146.31	146.91		PA
LILLINGTON	WA4FKI	144.87	145.47		
LINCOLNTON	WD4PLY	144.85	145.45		
LUMBERTON	WR4BDQ	147.96	147.36	N	A
MACO	K4OVA	147.66	147.06		
MANTEO	W4PCN	146.34	146.94		PA
MONROE	K4BGU	147.30	147.90	N	
MONROE	WR4BBN	147.705	147.105		A
MORGANTON	WB4PML	144.57	145.17		LP
MORGANTON	K4RP	147.75	147.15		
MT AIRY	WD4MDP	144.73	145.33	N	
MT AIRY	WB4UJH	146.37	146.97		
MT AIRY	WA4CQK	147.78	147.18	N	
MT PISGAH	WA4COS	144.65	145.25	N	P
MYRTLE BEACH	WA5MDD	146.07	146.67		
N. WILKESBORO	K4ITL	144.77	145.37		
NEW BERN	WD4JMS	146.01	146.61		PA
NEWPORT	K4GRW	144.85	145.45		
NEWTON	N4AWV	144.83	145.43	N	P
PINE BLUFF	WR4BAR	147.84	147.24	N	
RALEIGH	N4BEA	144.89	145.49		A
RALEIGH	WR4ACF	146.04	146.64		
RALEIGH	K4BWC	146.13	146.73		
RALEIGH	WR4AOE	146.28	146.88		
RALEIGH	W4PVI	146.415	147.015	N	L
RALEIGH	WR4AOE	147.75	147.15		PA
REIDSVILLE	K4YFT	146.25	146.85	N	
ROANOKE RAPIDS	K4PUV	147.63	147.03		
ROARING GAP	WB4PZA	146.22	146.82		
ROBBINSVILLE	WB4ZQB	146.445	147.045		
ROCKINGHAM	WA4ULA	146.355	146.955		
ROCKY MOUNT	WD4HIG	147.72	147.12		A
SALISBURY	W4EXU	146.13	146.73		
SANFORD	WB4EJJ	147.78	147.18	N	A
SAURATOWN MT	WB4SNA	144.79	145.39	N	CL
SHELBY	KB4AF	146.28	146.88		
SHELBY	WR4AWU	147.84	147.24	N	
SHELBY	KB4AF	147.945	147.345	A	
SMITHFIELD	WR4BBO	146.37	146.97		A
SPRING LAKE	WB4BCA	146.115	146.715	N	
STATESVILLE	A14O	146.085	146.685		PA
SYLVA	KA4V	147.90	147.30	N	
TRINITY	WD4KUN	144.69	145.29	N	P
TUCKASEGEE	W8MOV	147.90	147.30		
UNION CROSS	WB4RGV	147.915	147.315	N	
WADESBORO	W4USH	146.235	146.835	N	
WASHINGTON	WB4GMI	146.205	146.805	N	
WAYNESVILLE	N4SM	147.87	147.27		PA

WILLIAMSTON	WA4TKJ	144.81	145.41	
WILMINGTON	WR4AVF	146.13	146.73	
WILMINGTON	WR4AHL	146.22	146.82	
WINSTON-SALEM	W4HKB	144.59	145.19	N P
WINSTON-SALEM	WA4GIC	146.04	146.64	A

10-METERS

DURHAM	W4PVI	29.60	29.60	N RBL
NEWPORT	K4GRW	29.56	29.66	P

SIX METERS

CARY	WR4AVP	52.35	53.35	N
HENDERSONVILLE	WB4YAO	52.01	53.01	
HENDERSONVILLE	WB4YAO	52.525	52.525	RB
HICKORY	WR4ACM	52.47	53.47	N
HILLSBOROUGH	WA4WTX	52.01	53.01	
NEWPORT	K4GRW	52.01	53.01	P
RALEIGH	WR4AOE	52.05	53.05	
RALEIGH	WA4PEN	52.25	53.25	C

220 MHZ

ASHVL/MT PISGAH	WR4AEV	222.34	223.94	
CHARLOTTE	WR4AEU	222.36	223.96	P
CHERRYVILLE	WB4UDS	223.20	224.80	N
FAYETTEVILLE	WR4ADK	222.42	224.02	
GREENSBORO	KZ4O	223.22	224.82	RT
HICKORY	WR4ACM	222.42	224.02	N
HIGH POINT	K4AZA	222.32	223.92	PA
HILLSBOROUGH	WA4WTX	222.34	223.94	
LOCUST	WR4BBA	222.40	224.00	
MORGANTON	WB4PML	223.36	224.96	
RALEIGH	WA4PEN	223.04	224.64	
SALISBURY	W4EXU	223.16	224.76	
SAURATOWN MT	WR4AOW	223.28	224.88	
STATESVILLE	WA4QRS	222.70	224.30	N
SYLVA	KA4V	223.34	224.94	N
TRYON	WB4BYH	222.86	224.46	N P
WINSTON-SALEM	WB4UGW	222.44	222.04	N P
WINSTON-SALEM	WA4YHH	223.04	224.64	N P
WINSTON-SALEM	WA4GIC	223.10	224.70	R

450 MHZ

ASHVL/MT PISGAH	WR4ALE	449.90	444.90	N
CHARLOTTE	WR4AEU	449.60	444.60	P
CHARLOTTE	WR4ALO	449.85	444.85	N
DURHAM	WR4	449.00	444.00	N P
HIGH POINT	K4AZA	447.90	442.90	
HILLSBOROUGH	WA4WTX	449.10	444.10	PA
HILLSBOROUGH	WB4DBB	449.35	444.35	N
SALISBURY	W4EXU	449.70	444.70	P
SAURATOWN MT	WR4AOW	448.00	443.00	C

SOUTH CAROLINA REPEATERS

ANDERSON	WR4AIO	146.37	146.97	PA
ANDSN/SASFRAS MT	WR4AIO	146.19	146.79	
CAROWINDS	WR4ABK	147.78	147.18	
CHARLESTON	K4ILT	146.16	146.76	A
CHARLESTON	WR4AUV	146.19	146.79	N C
CHARLESTON	N4SC	146.34	146.94	N T
CHARLESTON	WR4BCP	147.87	147.27	N A
CHERAW	WD4HEH	147.735	147.135	
COLUMBIA	WB4URY	146.07	146.67	
COLUMBIA	WR4AYE	146.16	146.76	

COLUMBIA	K4AVU	146.28	146.88	N
COLUMBIA	WB4URY	146.34	146.94	
COLUMBIA	WR4AYE	147.84	147.24	
COLUMBIA	WB4VLY	147.93	147.33	
COLUMBIA	WB4URY	147.96	147.36	EA
DILLON	KA4BGA	146.145	146.745	N
DORCHESTER	W4NAT	147.78	147.18	N
FLORENCE	W4ULH	146.25	146.85	
FLORENCE	WA4ISM	146.37	146.97	PA
GASTON	WB4NEP	144.61	145.21	A
GREENVILLE	W4AZT	146.10	146.70	A
GREENVILLE	WR4	147.675	147.075	N PA
GREENWOOD	WR4AUE	147.765	147.165	PA
GREER	W4IQO	146.34	146.94	N
GRNVLE/CSRS HD	W4NYK	146.01	146.61	
GRNVLE/PARIS MT	W4NYK	146.22	146.82	PA
HODGES	KB4YF	144.53	145.13	N C
LANCASTER	W4PAX	146.10	146.70	PA
LAURENS	WA4UZA	146.25	146.85	A
LEXINGTON	WR4AGK	147.255	146.855	N
LITTLE MT	K4AVU	147.81	147.21	
LONG MT	WA4JRJ	147.87	147.27	
LYMAN	KS4I	147.885	147.285	
LYONS(GA)	K4HAO	146.22	146.82	
MARION	W4YXL	146.40	147.00	EA
MYRTLE BEACH	WA4KGN	146.01	146.61	
MYRTLE BEACH	WR4	147.72	147.12	N C
N. AUGUSTA	K4FKJ	146.13	146.73	
N. AUGUSTA	WR4ALS	147.72	147.12	N
ORANGEBURG	WR4AQY	147.69	147.09	N A
PICKENS	WR4ADP	146.40	147.00	
ROCK HILL	WR4???	144.71	145.31	N
ROCK HILL	WC4ABD	146.43	147.03	PA
SAVANNAH(GA)	W4HBB	146.28	146.88	
SAVANNAH(GA)	W4HBB	146.37	146.97	A
SPARTANBURG	K4JLA	147.69	147.09	N PA
SUMMERVILLE	WR4	146.25	146.85	N C
SUMTER	WR4AOI	146.04	146.64	A
SUMTER	WD4ECQ	147.615	147.015	
SUMTER/SHAW	WR4AUS	147.66	147.06	N
SWAINSBORO(GA)	K4VYX	146.19	146.79	
TOCCOA(GA)	KA4DIP	147.93	147.33	
WHITE HALL	WR4AQL	146.31	146.91	N

TEN METERS

ANDERSON	N4JK	29.53	29.63	N
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220 MHZ

COLUMBIA	WB4URY	222.30	223.90	
GREER	W4ILY	222.38	223.98	N PA
SASSAFRAS MTN	W4FJH	222.46	224.06	

450 MHZ

ANDERSON	N4JK	439.25	427.25	N CV
CHARLESTON	N4SC	449.10	444.509	N T
SUMMERVILLE	WR4	449.00	444.00	N P

REPEATER SYMBOLS

N	NON Member CVRA	L	Linked
A	Autopatch	C	Under Construction
PA	Private Autopatch	P	Proposed Repeater
EA	Emergency Autopatch	O	Off Air Temporarily
T	Tone Access	RB	Remote Base
M	T-MARC Repeater	R	RTTY

VIRGINIA REPEATERS

TWO METERS

ALEXANDRIA	W8LMB	144.83	145.43	M
ALEXANDRIA	WR4AXB	146.055	146.665	M
ALEXANDRIA	W4HFH	146.085	146.685	M
ALEXANDRIA	W4HFH	147.72	147.12	M
ALEXANDRIA	WA4CCF	147.915	147.315	M
BARREN SPRINGS	WR4AFQ	146.07	146.67	
BERRYVILLE	WR4APE	147.90	147.30	M
BLACKSBURG	WA4YRJ	146.115	147.715	
BLAND	N4AZJ	144.75	145.35	N
BLUE RIDGE	WA4MCP	147.765	147.165	N C
BLUEFIELD	WD4RPT	144.89	145.49	A
BLUEFIELD	WD8OGY	146.415	147.015	PA
BRIARPATCH MT	WR4AHR	147.69	147.09	PA
BRISTOL	K4ILW	146.07	146.67	A
BRISTOL	W4SZP	146.28	146.88	
BRUMLEY MT	WR4ATJ	146.01	146.61	N
BUFFALO MT	N4AZJ	144.61	145.21	N
CHARLOTTESVILLE	WR4ATL	146.16	146.76	
CHARLOTTESVILLE	WR4	146.325	146.925	N C
CHESAPEAKE	N4SD	146.19	146.79	
CHRISTIANSBURG	WA4HBC	147.855	147.255	N
CLIFTON FORGE	K4QEL	147.90	147.30	
COLE MTN	WR4BCI	147.93	147.33	N
COVINGTON	WB4CAV	146.22	146.82	
CRIMORA	W4PNT	147.675	147.075	
CULPEPPER	WR4BCS	147.72	147.12	M
DAN/WHT.OAK MT	WR4BDN	146.10	146.70	
DANTE	WD4CYZ	146.235	146.835	N
DANVILLE	WR4AHG	147.95	147.35	N
DANVILLE(DCC)	WB4JGJ	146.325	146.925	
DUBLIN	WB4UQZ	147.78	147.18	
ELLIS KNOB	W4WRN	147.645	147.045	N
FAIRFAX	W4LBL	146.19	146.79	A
FARMVILLE	WR4ASW	146.31	146.91	
FOREST	WR4ADY	146.16	146.76	A
FRANKLIN	K4SPS	147.90	147.30	N PA
FREDRICKSBURG	N4QD	147.615	147.015	N P
FRONT ROYAL	WB4NER	144.75	145.35	M P
GALAX	WR4AHR	144.53	145.13	
GALAX	WA4ZIV	144.83	145.43	N
GATE CITY	WD4GTA	147.945	147.345	N
GRUNDY	K4HWQ	147.90	147.30	N A
GUM SPRINGS	KB4GX	147.87	147.27	N
HAMPTON	WR4ALW	146.13	146.73	
HAMPTON	WR4AFT	146.34	146.94	N T
HAZEL MT	WD4CYZ	146.235	146.835	N
HIGH KNOB	K4AXO	147.81	147.21	N
JOHNSONS MT	WB4UJB	147.705	147.105	R
JONESVILLE	WA4OVC	146.31	146.91	
KLMNRK/SALUDA	WA4AFV	147.93	147.33	
LEXINGTON	WA4WBD	146.07	146.67	
LYNCHBURG	WR4AXO	146.01	146.61	N
MANASSAS	WB4HHN	146.37	146.97	PA
MARION	KA4HEP	146.04	146.64	N
MARTINSVILLE	AB4L	147.885	147.285	
MCLEAN	WR4APC	147.81	147.21	M R
NEW MARKET	WR4ATG	146.025	146.625	M
NORFOLK	WB4LJM	146.10	146.70	

PETERSBURG	K4SII	147.78	147.18	N
PETERSBURG	WR4BBU	147.84	147.24	
PETERSBURG	WR4AWC	147.99	147.39	N
PORTSMOUTH	K4LMY	146.25	146.85	N
RICHMOND	WB4QEQ	146.04	146.64	
RICHMOND	WR4ACW	146.28	146.88	PA
RICHMOND	W4ZA	146.34	146.94	T
RICHMOND	WD4DMO	147.66	147.06	N
RIPPLE MEADE	K4TUE	146.31	146.91	N
ROANOKE	WR4AHT	146.34	146.94	N A
ROANOKE	W4CA	146.385	146.985	EAL
SALEM	WR4AFE	146.28	146.88	N
SHENANDOAH	WB4DAK	147.855	147.255	N P
SOUTH BOSTON	WR4AYU	146.46	147.06	N
STAUNTON	WD4JEK	147.975	147.375	N C
STERLING	WA4TXE	146.115	146.715	M
SUFFOLK	WR4AKS	146.40	147.00	N PA
TAZEWELL	WD4DZE	147.75	147.15	N
TYSONS CORNER	K4VYN	146.31	146.91	PA
VIRGINIA BEACH	WB2YVN	146.01	146.61	N C
VIRGINIA BEACH	WA4KXV	146.37	146.97	EA
VIRGINIA BEACH	WA4SBC	147.645	147.045	N
VIRGINIA BEACH	WA4SBC	147.645	147.045	N
WARRENTON	WB4FJT	147.765	147.165	M
WAYNESBORO	W4BLD	147.63	147.03	PA
WILLIAMSBURG	W4NTG	146.07	146.67	N
WINCHESTER	W4RKC	146.22	146.82	T
WOODBRIIDGE	WR4AII	147.84	147.24	M A

SIX METERS

ABINGTON	WR4ATJ	52.01	53.01	M L
CHARLOTTESVILLE	WR4ATZ	52.525	52.525	N RBC
DANVILLE(DCC)	WB4JGJ	52.13	53.13	P
LEXINGTON	WR4BCI	52.01	53.01	N
LYNCHBURG	WB4DBB	52.15	53.15	N
NORFOLK	WR4ATK	53.525	52.525	N

220 MHZ

ALEXANDRIA	WA4CCF	223.22	224.82	M P
GALAX	WA4DFH	222.74	224.34	N P
LYNCHBURG	WB4DBB	223.34	224.94	N C
PORTSMOUTH	K4CRK	223.02	224.62	N C
SUFFOLK	WA4JUO	222.34	223.94	N C
TYSONS CORNER	K4GCM	222.34	223.94	

450 MHZ

CHARLOTTESVILLE	WR4ATL	449.25	444.25	N
COLE MTN	WR4BCI	449.15	444.15	N P
COVINGTON	WB4CAV	447.25	442.25	
FALLS CHURCH	WB8CRK	449.45	444.45	M L
LYNCHBURG	WB4DBB	449.35	444.35	N L
LYNCHBURG	WB4IUS	449.50	444.50	N T
MANASSAS	WD4JCE	444.225	449.225	M C
PETERSBURG	WR4BBU	449.50	444.50	
PETERSBURG	WR4BBZ	449.85	444.85	N
PORTSMOUTH	K4MLY	449.25	444.25	N
ROANOKE	W4CA	442.50	447.50	L
ROANOKE	WR4AFE	447.75	442.75	N
TAZEWELL	WD4DZE	448.90	443.90	N P
TYSONS CORNER	WB6GUS	443.50	448.50	M P
TYSONS CORNER	K4LHB	444.75	449.75	
VIRGINIA BEACH	WA4KXV	449.95	444.95	
WAYNESBORO	W4BLD	449.05	444.05	

TENNESSEE REPEATERS

TWO METERS

ALCOA	WR4APM	146.25	146.85	N
ALTAMONT	WR4AWN	146.37	146.97	N
BRISTOL	K4ILW	146.07	146.67	A
BRISTOL	W4SZP	146.28	146.88	A
BRISTOL	WR4AXQ	147.60	147.00	N
BRISTOL/HLSTN MT	WR4ADO	146.16	146.76	EA
BROWNSVILLE	WR4ASI	146.655	146.055	N
CHATTANOOGA	KB4TZ	144.79	145.39	
CHATTANOOGA	K4CMY	146.01	146.61	
CHATTANOOGA	W4DSK	146.19	146.79	A
CHATTANOOGA	WA4ZOK	147.60	147.00	PA
CLARKSVILLE	WR4A00	147.60	147.00	N
CLEVELAND	WR4AQV	147.78	147.18	N
COLUMBIA	WR4AIX	147.72	147.12	N
COOKEVILLE	WR4ANW	146.07	146.67	N
COOKEVILLE	WB4QJS	147.81	147.21	N
COVE MTN	WA4KJH	146.25	146.85	N PA
CROSSVILLE	WR4	147.93	147.33	N
DAYTON/RHEA CTY	N4OU	147.99	147.39	
FAYETTEVILLE	WR4BAQ	147.63	147.03	N
GALLITIN	WR4BCX	147.84	147.24	N
GREENEVILLE	W4ANB	146.10	146.70	
GREENEVILLE	WA4LYF	147.66	147.06	
HENDERSONVILLE	W4KKO	144.89	145.49	N
HENDERSONVILLE	WR4BCX	147.63	147.03	N
JACKSON	WR4AQN	147.81	147.21	N
JOHNSON CTY	WB41KB	146.19	146.79	
JOHNSON CTY	WA4DFU	147.87	147.27	A
JONESBORO	WB4SQC	147.99	147.39	PA
KNGSPT/BAYS MT	W4TRC	146.37	146.97	A
KNOXVILLE	WB4JSD	144.51	145.11	R
KNOXVILLE	WR4APU	146.13	146.73	
KNOXVILLE	K4HXD	146.34	146.94	
KNOXVILLE	WR4AHF	146.40	147.54	A
KNOXVILLE	K4HXD	147.675	147.075	A L
KNOXVILLE	W4BBB	147.90	147.30	
LAFOLLETTE	W4TZG	146.07	146.67	
LAKE CITY	WB4OAH	146.22	146.82	N
LEBANON	WR4BBM	146.13	146.73	N
MADISON	WR4AKN	146.04	146.64	N
MANCHESTER	WR4ACI	146.10	146.70	
MEDINA	K4BEZ	146.37	146.97	N
MEMPHIS (MARS)	AAA4TN	148.01	143.99	
MEMPHIS	WR4AZK	144.89	145.49	N
MEMPHIS	WR4AHK	146.01	147.51	N
MEMPHIS	W4GYS	146.04	146.64	N
MEMPHIS	WR4AOG	146.10	146.70	N R
MEMPHIS	WR4AGR	146.13	146.73	N
MEMPHIS	WR4ABS	146.19	147.51	N
MEMPHIS	WR4AHO	146.22	146.82	N
MEMPHIS	WR4AZK	146.25	146.85	N
MEMPHIS	WA4ETE	146.28	146.88	N
MEMPHIS	K4BN	146.34	146.94	N
MEMPHIS	K4FZJ	146.40	147.00	N
MEMPHIS	WR4AXF	146.46	147.06	N
MEMPHIS	WR4BCU	147.63	147.03	N
MEMPHIS	WR4AWT	147.67	147.09	N
MEMPHIS	WB4DAZ	147.72	147.12	N
MEMPHIS	WR5AII	147.75	147.15	N

MEMPHIS	WR4AZK	147.78	147.17	N
MEMPHIS	WD4APK	147.84	147.24	N
MEMPHIS	WR4AZC	147.87	147.27	N
MEMPHIS	WR4ASF	147.90	147.30	N
MEMPHIS	WR4ATA	147.96	147.36	N
MEMPHIS	WR4ASR	147.99	147.39	N
MORRISTOWN	WB4OAH	147.63	147.03	N
MORRISTOWN	WB4OAH	147.825	147.225	N
NASHVILLE	WR4AWV	146.01	146.61	N
NASHVILLE	WR4AKN	146.07	146.67	N
NASHVILLE	WR4ACS	146.16	146.76	N
NASHVILLE	WR4AFA	146.19	146.79	N
NASHVILLE	WR4ABV	146.25	146.85	N
NASHVILLE	WR4ACY	146.28	146.88	N
NASHVILLE	WR4AGX	146.34	146.94	N
NASHVILLE	AI4P	147.615	147.015	N
NASHVILLE	WR4AUX	147.75	147.15	N
NASHVILLE	WB4HFS	147.78	147.18	N
NASHVILLE	WA4YQC	147.87	147.27	N
NASHVILLE	WB4ZSA	147.90	147.30	N
NASHVILLE	WR4BBT	147.945	147.345	N
NASHVILLE	WR4AKN	147.96	147.36	N
NASHVILLE	WR4	147.975	147.375	N
NASHVILLE	WB4DLQ	147.99	147.39	N
NEWBERN	AA4HF	146.745	146.145	N
OAK RIDGE	WR4ADQ	144.85	145.45	N
OAK RIDGE	W4SKH	146.28	146.88	A
OAK RIDGE	W4SKH	146.37	146.97	A
OAK RIDGE	K4EAJ	147.72	147.12	
OAK RIDGE	K4EAJ	147.75	147.15	R
PARIS	WR4AYM	147.96	147.36	N
POPLAR BLUFF(MO)	WOBUI	146.31	146.91	
PULASKI	W4JVO	146.715	146.115	N
SAVANNAH	WA4HGN	146.31	146.91	N
SHELBYVILLE	WR4AQM	147.66	147.06	N
SHORT MT.	WR4AZF	146.31	146.91	
SPARTA	WR4ASV	147.69	147.09	
SPRINGFIELD	WR4AGH	147.63	147.03	N
UNION CITY	WR4AUQ	146.10	146.70	N
UNION CITY	K4MVE	146.655	146.055	N
WAVERLY	WR4AYB	146.685	146.085	N
WINCHESTER	WR4AFH	146.22	146.82	N
6 METERS				
KNOXVILLE	WB4IOB	52.15	53.15	
KNOXVILLE	WA4YON	52.46	53.46	N
KNOXVILLE	K4HXD	52.76	52.525	
LAFOLLETTE	K4BGW	52.17	53.17	
MEMPHIS	WR4AZK	52.01	53.01	N
220 MHZ				
CHATTANOOGA	K4VCM	223.18	224.78	A
CHATTANOOGA	WA4ZOK	223.30	224.90	
GREENEVILLE	WB4NKM	223.34	224.94	
KNOXVILLE	WA4YON	222.86	224.46	N
LAFOLLETTE	K4BGW	222.80	224.40	N
NASHVILLE	WR4	223.38	224.79	N
440 MHZ				
ALAMO	WB4EDS	448.75	443.75	N L
CHATTANOOGA	WA4ZOK	439.25	427.25	V
GREENEVILLE	K4OTM	439.25	427.25	N V
KNGSPT/HLSTON MT	WR4ADO	449.50	444.50	EA
KNOXVILLE	K4HXD	449.30	444.30	N
MEDINA	K4BEZ	447.05	442.05	N AL

GEORGIA REPEATERS

ADAIRSVILLE	WB4LR4	146.085	146.685
ALBANY	WR4ADM	146.10	146.70
ALBANY	WR4ANB	146.22	146.82
AMERICUS	WR4AQH	147.87	147.27
ASHBURN	K4QT	147.285	147.885
ATHENS	WA4BKF	146.13	146.73
ATHENS	K4TQU	147.375	147.975
ATLANTA GA TECH	W4AQL	147.66	147.06
ATLANTA	N4CLA	144.69	145.29
ATLANTA	WR4ABE	146.04	146.64
ATLANTA	W4DOC	146.22	146.82
ATLANTA	WR4ABC	146.37	146.97
ATLANTA	WR4AHS	147.855	147.255
AUGUSTA	WR4AGD	146.34	146.94
BALDWIN	WD4NHV	147.78	147.18
BRUNSWICK	K4TVE	146.13	146.73
BURFORD	WR4BBV	147.87	147.27
CARROLLTON	W4FWD	146.04	146.64
CEDARTOWN	WR4AZU	147.72	147.12
CLEVELAND	K4FOW	144.69	145.29
CODDLETON	N4AHE	147.225	147.825
COLUMBUS	WR4AXM	146.46	146.06
COLUMBUS	WD4BDU	144.71	145.31
COLUMBUS	WR4BBB	146.01	146.61
COLUMBUS	W4YIE	146.13	146.73
COLUMBUS	N4BJZ	146.28	146.88
COLUMBUS	WA4HCI	147.21	146.01
COLUMBUS-RTTY	K4ACH	144.77	145.37
CONYERS	WB4JDM	147.81	147.21
COVINGTON	WA4ASI	146.925	146.325
CUMMING	WB4JT	144.81	145.41
CUMMING	WR4AOC	147.75	147.15
DALLAS	WR4AHM	146.25	146.85
DALLAS	KB4EO	147.96	147.36
DUBLIN	WA4HZX	147.96	147.36
FOLKSTON	K4DMK	146.19	146.79
FOREST PARK	K4QKQ	144.65	145.25
FORSYTH	WR4AQA	147.315	147.915
GAINESVILLE	WR4AEK	146.07	146.67
GRIFFIN	WB4GWA	144.81	145.41
GRIFFIN	WR4AIV	146.31	146.91
GRIFFIN	WR4AEA	146.43	147.03
HAMILTON	WD4MJV	147.835	147.235
HAPEVILLE	WR4ABN	147.63	146.03
HARTWELL	WA4NBP	146.895	146.295
IRWINTON	WB4NFG	147.84	147.24
ISABELLA	W4MM	146.13	146.73
JESUP	WA4EQL	146.07	146.67
JONESBORO	WA4OGE	144.73	145.33
JONESBORO	W5BO	144.85	145.45
KENNESAW	WB4UPC	145.43	146.03
KENNESAW	WD4BMC	146.13	146.73
KENNESAW	WR4AHM	146.28	146.88
KENNESAW	WB4UPC	147.94	147.34
KENNESAW	WR4AVJ	147.93	147.33
LAGRANGE	K4HAO	146.22	146.82
LYONS*	WB4OLL	144.83	145.43
MACON	WB4KM	146.06	146.66
MACON	K4IIA	147.66	147.06
MARIETTA	W4PPT	147.075	147.675
METTER	W4TUM	146.31	146.91
MILLEDGEVILLE	WB4DOJ	146.10	146.70
MOULTRIE	WD4KOW	146.19	146.79
NEWNA	K4SEX	146.19	146.79
PINE MT VALLEY	WB4ULV	144.59	145.19
PRESTON	W4TVO	146.385	146.985
QUITMAN	WR4BBH	146.28	146.88
RINGGOLD	WR4ABZ	146.715	146.115
ROME	WR4ADH	146.34	146.94
ROSWELL	WB4BRO	144.87	145.47
SANDY SPRINGS	WB4CPL	144.75	145.35
SANDY SPRINGS		146.40	147.00
SAVANNAH	WD4AFY	144.77	145.37
SAVANNAH	K4NLX	146.10	146.70
SAVANNAH	WR4AVO	147.63	147.03
SAVANNAH*	W4HBB	146.28	146.88
SAVANNAH*	W4HBB	146.37	146.97
SMYRNA	W44YUR	144.61	145.21
STONE MTN	WR4AED	146.16	146.76
STONE MTN-RTTY	WR4BAG	147.105	147.705
SVR CRK/MT ALTO	K4NHM	147.90	147.30
SWAINSBORO*	K4VYX	146.19	146.79

THOMASTON	K4IMK	147.99	147.39
THOMASVILLE	K4UFM	147.66	147.06
TOCCOA*	K4ADIP	147.93	147.33
UNION CITY	WA4UPE	146.025	146.625
VALDOSTA	WA4SMH	146.16	146.76
VALDOSTA	WA4SMH	147.135	147.735
VIENNA	WA4RWS	144.89	145.49
WARNER ROBBINS	WB4BEO	146.25	146.85
WARNER ROBBINS	WR4AZP	147.90	147.30
WAYCROSS	WR4AMK	146.04	146.64
WRIGHTSVILLE	WA4RVB	146.34	146.94

MARYLAND REPEATERS

ASHTON	WR3AFT	146.40	147.00
BALTIMORE	KA3ALC	146.025	146.625
BALTIMORE	WR3AFM	146.07	146.67
BALTIMORE	W3DID	147.63	147.03
BALTIMORE	WR3AUI	147.885	147.285
BEL AIR	K3GUX	146.175	146.775
BETHESDA	K3YGG	144.69	145.29
CHELTERHAM	WA3OPC	147.75	147.15
CHEVERLY	WR3ABC	146.01	146.61
COLLEGE PARK	W3BAK	144.81	145.41
COLUMBIA	K3CJL	147.735	147.135
COLUMBIA	WR3AGP	147.99	147.39
CROWNSVILLE	WR3ACL	146.10	146.70
CUMBERLAND	WB3II	144.85	145.45
CUMBERLAND	WR3AGI	146.28	146.88
DAVIDSONVILLE	WR3AUF	147.705	147.105
E. BALTIMORE	WR3AFI	147.84	147.24
EASTON	WA4GVI	146.445	147.045
FREDERICK	WR3ABL	146.13	146.73
FREDERICK	WA3OHI	147.66	147.06
FROSTBURG	K3CCC	147.99	147.39
GAITHERSBURG	WR3AKP	146.355	146.955
GLEN BURNIE	WR3PQU	146.205	146.805
GREENBELT	WR3ABB	146.28	146.88
HAGERSTOWN	K3CWC	146.34	146.94
HAGERSTOWN	W3UMV	147.69	147.09
HAGERSTOWN	WB3DQ	147.84	147.24
HAYRE DE GRACE	K3UAV	146.25	146.85
JESSUP	WR3ACZ	146.16	146.76
LEXINGTON PARK	WR3ACP	146.04	146.64
LEXINGTON PARK	W3NET	146.265	146.865
N. BALTIMORE	WA3OKQ	146.34	146.94
OCEAN CITY	W3HBT	147.78	147.18
POTOMAC	WR3ACF	147.87	147.27
ROCKVILLE	W3RCN	144.65	145.25
ROCKVILLE	WR3ABM	146.04	146.64
SALISBURY	WR3ABS	146.22	146.82
SALISBURY	WA3YII	146.385	146.985
SEVERNA PARK	WR3ACL	146.10	146.70
SILVER SPRING	WR3AEO	147.78	147.18
W. BALTIMORE	WR3AGS	147.945	147.345
WASHINGTON DC	WR3AGX	147.96	147.36
WESTMINSTER	K3PZN	144.81	145.41
WHEATON	WR3AFD	147.69	147.09

ALABAMA REPEATERS

ALBERTVILLE	K4WSW	146.16	146.76
ALEXANDER CITY	WA4KIK	146.37	146.97
ANDALUSIA	WR4AFF	146.34	146.94
ASHEVILLE	WR4AQD	147.81	147.21
ATHENS	WR4AKD	146.55	147.15
AUBURN	K4RY	147.84	147.24
BAY MINETTE	K4JIE	146.01	146.61
BIRMINGHAM	K4QWQ	144.55	145.15
BIRMINGHAM	K4GTT	144.75	145.35
BIRMINGHAM	K4IR	144.81	145.41
BIRMINGHAM	WB4ACB	146.16	146.76
BIRMINGHAM	WB4SGI	146.28	146.88
BIRMINGHAM	W4CUE	146.34	146.94
BIRMINGHAM	W4EVO	146.43	147.03
BIRMINGHAM	K4TJW	146.655	146.055
BIRMINGHAM	N4YZ	146.985	146.385
BIRMINGHAM	KA4EIR	147.285	147.885
BIRMINGHAM	WR4AXA	147.63	147.03
BIRMINGHAM	WR4AZG	147.75	147.15
BIRMINGHAM	WA4MHO	147.93	147.33
BLACK	K4LYI	147.81	147.21
BOAZ	K4CWD	147.66	147.06
BREWTON (EAST)	WR4ABE	146.37	146.97

CHEROKEE-BARTON	K4YVV	146.16	146.76
CLANTON	WR4AYJ	146.19	146.79
CULMAN	WR4ASY	146.25	146.85
DECATUR	WA4TD	146.13	146.73
DECATUR	WA4TD	146.40	147.00
DEMOPOLIS	WR4AJN	146.04	146.64
DOTHAN	N4AN	146.25	146.85
ENTERPRISE	WD4ROJ	147.84	147.24
EUPAULA	WA4AKA	146.10	146.70
EVERGREEN	WR4ALR	146.31	146.91
FAIRHOPE	WA4NNE	146.10	146.70
FAYETTE	K4ACL	147.63	147.03
FLORALA	WD4DNK	147.66	147.06
FLORENCE	WB4QNH	146.22	146.82
FLORENCE	WA4IEN	146.28	146.88
FLORENCE (UALA)	WB4SRG	146.31	146.91
FORT PAYNE	W4RNX	147.87	147.27
GADSDEN	W4DEN	146.22	146.82
GRADY	W4AP	147.78	147.18
GREENVILLE	K4TNS	146.07	146.67
GROVE HILL	WB4THU	147.87	147.27
GULF SHORES	WB4QWS	146.04	146.64
GUNTSVILLE	K4VQJ	147.165	146.565
HALEYVILLE	K4QKE	146.19	146.79
HAMILTON	WA4RNN	146.37	146.97
HAMILTON	VA4RNN	146.985	146.385
HARTSELLE	WR4BDB	146.805	146.205
HEADLAND	WA4QEO	146.16	146.76
HUNTSVILLE	WR4AIU	144.83	145.43
HUNTSVILLE	K4IQU	146.34	146.94
HUNTSVILLE	K4RSB	147.225	147.825
HUNTSVILLE	WB4LTT	147.78	147.18
HUNTSVILLE	WR4AVG	147.90	147.30
HUNTSVILLE	WD4KTY	147.375	147.975
JACKSONVILLE	WR4APF	146.04	146.64
JASPER	WR4ASM	146.10	146.70
JASPER	WB4ACN	146.31	146.91
LANETT	K4DZX	147.60	147.00
LEXINGTON/ANDSN	WR4AYZ	147.84	147.24
LINCOLN	K4MDQZ	144.89	145.49
MOBILE	W4XKO	146.13	146.73
MOBILE	WR4AHQ	146.22	146.82
MOBILE	WB4EXM	146.34	146.94
MOBILE	WB4DCL	147.66	147.06
MOBILE	WA4HFL	147.90	147.30
MONTGOMERY	W4AP	146.16	146.76
MONTGOMERY	WB6GDM	146.25	146.85
MONTGOMERY	WR4AUT	146.31	146.91
MONTGOMERY	WR4AJH	146.40	147.00
MONTGOMERY	WR4AHZ	147.87	147.27
MT CHEREAH	K4BQP	147.69	147.09
MUSCLE SHOALS	W4JNB	146.01	146.61
MUSCLE SHOALS	WB4NQH	146.715	146.115
MUSCLE SHOALS	WB4DIN	147.945	147.345
OPELIKA	W4ZBA	147.195	147.795
OPELIKA	W4ZBA	147.72	147.12
OPELIKA	WB4KNN	147.90	147.30
OPP	WR4AKM	146.04	146.64
OXFORD	WR4AVM	146.10	146.70
PELL CITY	W4RKS	146.01	146.61
PHENIX CITY	WR4BBB	146.01	146.61
PHENIX CITY	N4BJZ	146.28	146.88
RIVERSIDE	WR4AQS	147.81	147.21
ROANOKE	K4JTW	146.865	146.265
SCOTTSBORO	WR4AUZ	146.31	146.91
SELMA	W4NCK	146.13	146.73
SELMA	WR4AXP	147.96	147.36
STEELE	W4OEN	146.07	146.67
STEVENSON	WA4PKB	147.96	147.36
TALLADEGA	W4GBQ	147.96	147.36
TEXASVILLE	W4ICO	146.19	146.79
THOMASVILLE	WA4GNA	147.60	147.00
TROY	WR4AHH	146.22	146.82
TUSCALOOSA	WR4AEH	146.22	146.82
TUSCALOOSA	WA4QAZ	146.37	146.97
TUSCALOOSA	KX4I	147.66	147.06
TUSKEGEE	WR4ASH	146.07	146.67
VERNON	WB4TLC	144.85	145.45
WARRIER	WB4TOX	146.04	146.64
WETUMPKA	W4AP	146.16	146.76
WETUMPKA	WR4AZL	146.455	147.055
WETUMPKA	W4MTG	147.645	147.045
WILSONVILLE	WA4MTG	147.745	147.145
WINFIELD	N4YZ	146.985	146.385
WINFIELD	K4GX	146.955	146.355

FLORIDA REPEATERS

TWO METERS

ARCADIA	W4MIN 147.675	147.075	LAKELAND	WB4QID 146.085	146.685	SARASOTA	WR4AUP 146.13	146.73
BELLE GLADE	W4MML 144.85	145.45	LARGO	WR4AKV 146.37	146.97	SEBRING	WR4BBJ 147.87	147.27
BELLE GLADE	A14D 147.60	147.00	LIVE OAK	K4BZS 146.34	146.94	SEMINOLE	K4GGX 147.135	146.70
BOCA RATON	WB4QYF 146.22	146.82	MIAMI	WR4AWY 146.07	146.67	SINGER IS	WD4LGT 144.57	145.17
BRADENTON	W4OHA 144.65	145.25	MELBOURNE	WR4AMJ 146.01	146.61	SINGER IS	N4BBZ 147.765	147.165
BRADENTON	WR4NYF 146.01	146.61	MELBOURNE	WR4AMJ 146.25	146.85	ST CLOUD	W4SIE 146.19	146.79
BRADENTON	W4TAS 146.22	146.82	MELBOURNE	WB4ABK 146.385	146.985	ST PETERSBURG	W4ACZW 144.85	145.45
BRADENTON	W4BTV 147.69	147.09	MELBOURNE	WR4AEE 147.705	147.105	ST PETERSBURG	WB4COT 146.31	146.91
BRANDON	WB4BIM 147.765	147.165	MIAMI BEACH	W4FQM 147.78	147.18	ST PETERSBURG	K4KE 147.60	147.20
BRANDON	WD4AGM 147.99	147.39	MIAMI	WB4VMU 144.53	145.13	ST PETERSBURG	K4SCL 147.66	147.06
BROOKSVILLE	WR8AKR 146.115	146.715	MIAMI	K4HYE 144.55	145.15	ST PETERSBURG	W4FYR 147.885	147.285
CALLAHAN	KC4P 146.01	146.61	MIAMI	WD4RXD 144.59	145.19	ST PETERSBURG	WR4AUF 147.915	147.315
CANTONMENT	WB4JIM 147.93	147.33	MIAMI	K4DFX 144.65	145.25	ST PETERSBURG	W4PVP 147.96	147.36
CLERMONT	WR4APH 146.295	146.895	MIAMI	AK4Y 144.67	145.27	ST PETERSBURG	K4FT 146.46	147.06
CLERMONT	WR4AYH 147.78	147.18	MIAMI	W4ARD 144.71	145.31	SUNRISE	WD4NW 144.69	145.29
COCOA BEACH	WR4AFI 146.43	147.03	MIAMI	K4LJD 144.75	145.35	TALLAHASSEE	WR4AB 146.055	146.655
COCOA	WR4AFI 146.28	146.88	MIAMI	K4HWE 144.79	145.39	TALLAHASSEE	WD4HWE 146.31	146.91
CRESTVIEW	WB4UVI 146.43	147.46	MIAMI	WD4NLG 144.81	145.41	TALLAHASSEE	K4WZA 147.63	147.03
CRESTVIEW	WB4UVI 147.96	147.36	MIAMI	K4BMF 144.83	145.43	TAMPA	W4EFK 144.89	145.49
CRYSTAL RIVER	WR4AQX 147.87	147.27	MIAMI	K4ASN 144.87	145.47	TAMPA	KR4X 146.16	146.76
DAYTONA BEACH	WR4ALG 146.235	146.835	MIAMI	WR4AQX 144.89	145.49	TAMPA	W4AKWL 146.19	146.79
DAYTONA BEACH	WR4FKL 146.34	146.94	MIAMI	WD4NLG 146.13	146.73	TAMPA	W4TTW 146.235	146.835
DAYTONA BEACH	WR4AKH 147.75	147.15	MIAMI	WD4MCK 146.16	146.76	TAMPA	WB4AKA 146.265	146.865
DAYTONA BEACH	WB4HAO 147.84	147.24	MIAMI	WB4INA 146.205	146.805	TAMPA	WR4AKR 147.63	147.03
DEERFIELD BEACH	W4ZUG 146.105	146.705	MIAMI	W4NBL 146.295	146.895	TAMPA	W4VDE 147.75	147.15
DELAND	WR4ARF 147.96	147.36	MIAMI	W4ARD 146.325	146.925	TAMPA	K4SDV 147.81	147.21
DISNEY WORLD	WR4ANG 147.90	147.30	MIAMI	WC4ACO 146.34	146.94	TAMPA	KO4J 147.84	147.24
ENGLEWOOD	KODGF 146.175	146.775	MIAMI	WR4AFN 146.46	147.06	TAMPA	W4AVOT 147.945	147.345
EUSTIS	WR4ARU 147.855	147.255	MIAMI	N4EEN 147.615	147.015	TAMPA	W4NGH 147.975	147.375
FLORAL CITY	W4TIR 146.355	146.955	MIAMI	WR4AHN 147.69	147.09	TICE	K4VGN 146.115	146.715
FT LAUDERDALE	WR4AYC 144.51	145.11	MIAMI	WR4AWF 147.75	147.15	TITUSVILLE	WB4IFH 146.07	146.67
FT LAUDERDALE	N4AIV 144.610	145.210	MIAMI	AP4S 147.81	147.21	TITUSVILLE	W4NOV 146.31	146.91
FT LAUDERDALE	WB4LAL 144.63	145.23	MIAMI	WR4ASA 147.84	147.24	TITUSVILLE	K4DII 146.37	146.97
FT LAUDERDALE	W44TPR 144.73	145.33	MIAMI	W44TPW 147.855	147.255	VERO BEACH	W4TOT 146.04	146.64
FT LAUDERDALE	AC4K 146.04	146.64	MIAMI	WR4BDC 147.87	147.27	W PALM BEACH	W4AARE 146.07	146.67
FT LAUDERDALE	W44LZR 146.19	146.79	MIAMI	WB4IVM 147.885	147.285	W PALM BEACH	WR4AIS 146.10	146.70
FT LAUDERDALE	WR4ADU 146.31	146.91	MIAMI	WB4ESB 147.90	147.30	W PALM BEACH	K4EAPS 146.145	146.745
FT LAUDERDALE	WB4HAG 146.355	146.955	MIAMI	N4XZ 147.93	147.33	W PALM BEACH	WR4AFM 146.28	146.88
FT LAUDERDALE	WR4ATI 146.43	147.03	MIAMI	WB4DTC 147.945	147.345	W PALM BEACH	WR4AIT 146.37	146.97
FT LAUDERDALE	W44IQ3 147.735	147.135	MIAMI	WB4DXH 147.975	147.375	W PALM BEACH	W44GBD 147.885	147.285
FT MYERS	WR4AES 146.19	146.79	MILTON	W44LPT 147.99	147.39	W PALM BEACH	WD4NWI 147.915	147.315
FT MYERS	WB4TLF 146.28	146.88	NAPLES	K4IVD 146.10	146.70	W PALM BEACH	W44HXZ 147.96	147.36
FT PIERCE	WR4AHW 146.13	146.73	NAPLES	WR4ANO 146.07	146.67	WINTER HAVEN	WR4AUY 146.055	146.655
FT PIERCE	W44MLD 147.81	147.21	NAPLES	WB4FUS 146.265	146.865			
FT WALTON BCH	WR4ABZ 146.19	146.79	NEW PORT RICHEY	WD4ILS 147.945	147.345			
FT WALTON BCH	W4MTD 146.28	146.88	NEW PORT RICHEY	WR4AML 146.025	146.625			
FT WALTON BCH	WR4BDM 147.60	147.00	NICEVILLE	WR4AZD 146.07	146.67			
GAINESVILLE	WB41JR 146.19	146.79	OCALA	K44EPQ 146.13	146.73			
GAINESVILLE	WR4ACE 146.22	146.82	OCALA	WR4ALJ 146.01	146.61			
GAINESVILLE	W4DFU 146.31	146.91	OCCECHOBEE	WB4QQK 147.795	147.195			
GAINESVILLE	KB4HF 147.975	147.375	ORANGE PARK	WR4AQZ 146.07	146.67			
HALLANDALE	WR4ACC 146.25	146.85	ORLANDO	WB4TCW 146.04	146.64			
HALLANDALE	K2YRZ 146.085	146.685	ORLANDO	W4OHL 146.10	146.70			
HALLANDALE	W44WHD 146.10	146.70	ORLANDO	WR4AFO 146.16	146.76			
HALLANDALE	WB4TON 146.385	146.985	ORLANDO	W4AEL 146.22	146.82			
HOMESTEAD	W4SVI 146.235	146.835	ORLANDO	WB4UOL 147.63	147.03			
HOMESTEAD	KB4KW 146.40	147.00	ORLANDO	WR4AJR 147.69	147.09			
HUDSON	WR4AXW 146.205	146.805	ORLANDO	WR4AEL 147.72	147.12			
JACKSONVILLE	WR4AMI 146.04	146.64	ORLANDO	WR4AER 147.825	147.225			
JACKSONVILLE	WR4AZH 146.13	146.73	ORLANDO	WR4ARO 147.99	147.39			
JACKSONVILLE	K4YLX 146.16	146.76	ORLANDO	K4SJA 144.65	145.25			
JACKSONVILLE	W441HY 146.205	146.805	ORLANDO	K4DXL 147.69	147.09			
JACKSONVILLE	WR4AKP 146.25	146.85	ORLANDO	W4EXP 147.93	147.33			
JACKSONVILLE	K4YLX 146.28	146.88	ORLANDO	WR4ALU 146.10	146.70			
JACKSONVILLE	K4CP 146.40	147.00	ORLANDO	K4PMO 146.34	146.94			
JACKSONVILLE	K4A1UC 147.645	147.045	ORLANDO	WB4SIN 147.99	147.39			
JACKSONVILLE	WB4NCZ 147.69	147.09	ORLANDO	W4UAJ 144.51	145.11			
JACKSONVILLE	N4UF 147.795	147.195	ORLANDO	WR4ACZ 146.16	146.76			
JACKSONVILLE	WR4APN 147.825	147.075	ORLANDO	WR4BDF 146.25	146.85			
JACKSONVILLE	K4YLX 147.99	147.39	ORLANDO	W4A1K 146.34	146.94			
JACKSONVILLE	WR4APJ 147.99	147.39	ORLANDO	W4A1ZM 147.75	147.15			
JACKSONVILLE	WR4APJ 147.84	147.24	ORLANDO	W4RTN 146.37	146.97			
JUNO BEACH	WB41LU 146.025	146.625	ORLANDO	K4YR 144.56	145.16			
JUPITER	WR4AOV 146.34	146.94	ORLANDO	WR4ANM 144.87	145.47			
KEY WEST	W4VRR 147.75	147.15	ORLANDO	W2GDG 144.70	145.37			
LAKE CITY	W4UJZ 147.75	147.15	ORLANDO	WB4UFA 146.01	146.61			
LAKE PARK	WR4BBR 147.645	147.045	ORLANDO	WD4NQK 147.735	147.135			
LAKE PLACID	WR4AND 146.93	147.33	ORLANDO	WB4YRW 147.705	147.105			
LAKE WALES	W2HGV 144.69	145.29	ORLANDO	WR4APL 146.28	146.88			
LAKELAND	WB4QID 144.83	145.43	ORLANDO	W4QCP 147.66	147.06			
LAKELAND			ORLANDO	WR4AJC 146.13	146.73			
			ORLANDO	WR4AUP 144.53	145.13			

220 MHZ

CLEARWATER	WR4AVI 223.34	224.94
CLEARWATER	W4DPH 223.38	224.98
CRESTVIEW	WB4CDR 223.22	224.82
ELGIN AFB	WB4JEJ 223.34	223.94
FT LAUDERDALE	WB4QKZ 222.62	224.22
FT LAUDERDALE	WR4ATI 223.30	224.90
JACKSONVILLE	WR4AGT 222.90	224.50
JACKSONVILLE	W4AKKY 223.34	224.94
KATHLEEN	N4ADD 223.02	224.62
KEY LARGO	WD4NEZ 222.94	224.54
LAKELAND	KF4Y 222.38	223.98
LAKELAND	W4NY 223.10	224.70
LARGO	W4AGCH 222.34	223.94
LARGO	K4SCL 223.06	224.66
MIAMI	WR4ASN 222.34	223.94
MIAMI	WD4GZL 222.38	223.98
MIAMI	WB4INA 222.90	224.50
MIAMI	K4HWE 223.18	224.78
MIAMI	WR4BCB 223.22	224.82
MIAMI	WR4BDB 223.26	224.86
MIAMI	WR4AKZ 223.34	224.94
MIAMI	WB4VMU 223.38	224.98
MILTON	K4IVD 223.10	224.70
NORTH MIAMI	A14I 223.14	224.74
ORLANDO	WBANK 223.22	224.82
ORLANDO	WBANK 223.34	224.94
PENSACOLA	W4AKST 223.34	224.94
ST PETERSBURG	WR4ANX 223.26	224.86
ST PETERSBURG	W4APV 223.30	224.90
TAMPA	KD4J 222.62	224.22
TAMPA	W4WVV 223.14	224.74
TAMPA	WD4MCR 223.18	224.78
VALRICO	AA4WJ 222.94	224.54

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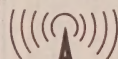
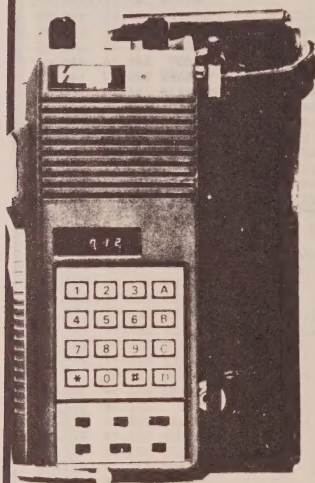
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500 mhr Battery Pak	29.95
Mobile Chg/Power cord	9.95

- 4W High/1W Low (True low power, no resistor)
- 10 Memory Channels with Auto Memory Initialize
- Digital Display — Reliable Long-Life, Rugged LED's
- T1 4 Bit Microprocessor/Keyboard Control
- 16 Tone Touchtone Generator
- Single Button Memory Recall
- Heavy Leather Case (Optional)
- 800 Channels plus MARS (143.0 — 149.995)
- Keyboard Entry of All Frequencies, All Digits plus Autotone

- Up/Down Bandscan (Stops on signal, resumes scan on sq.)
- Up/Down Memory Scan (10 memories)
- Up/Down Bandsearch (Stops on signal, locks entry)
- Up/Down Memory Search (Locks on first used memory)
- Scan Steps in 5 kHz Increments, Keyboard Selected
- Preprogrammed : 600 kHz
- Any Split Programmable by the User
- Automatic Display or Continuous Readout
- Remote Mic Jack

☐ The HT-1200 produces about 4 watts on all the ham frequencies, from 144.000 to 147.995, for the punch needed for repeater/handheld communications. The low power mode is true low current drain.

☐ A Texas Instruments TMS 1000 microprocessor powers the brain of the unit, providing keyboard entry of all digits down through the kHz digit.

☐ In addition to providing 10 programmable memories, the microprocessor programs 10 different popular frequencies into the memory on initial start-up. These may be overwritten by the user when programming his favorites. This added convenience is standard in the Santec.

The Sante HT-1200 4W SYNTHESIZER RADIO MODULE

COMPARE SANTEC WITH ANY OTHER...YOU'LL WANT SANTEC

Auto Memory Initialize - The SANTEC HT-1200 initializes each of the 10 memories with a two-meter frequency upon the application of power to the microprocessor. This feature means that in many areas of the country the memory selection needs only to be modified slightly or not at all for immediate use, BACK-UP BATTERY DRAIN IS ZERO for this feature. The frequencies used are: 146.52, .76, .82, .88, .94; 147.00, .06, .12, .18, .51

10 Memory Capacity - Because it is difficult to remember where more than ten frequencies are located in memory, Sante stopped at ten. The writing of user determined frequencies is done in the frequency and memory modes while the recall of any memory requires only ONE KEYSTROKE in the memory mode.

16 Tone DTMF Generator - Sante recognizes that many applications for repeater autopatch require the use of all 16 of the DTMF tones. For this reason we have included all the tones in the capability of the unit. The level is independently adjustable with regard to mike audio or CTCSS audio.

CTCSS Capacity For 32 Tone Encoder or Decoder/Decoder - Sante has made provision inside the case of the HT-1200 for the latest synthesized CTCSS encoder to fit and be supplied power and a receiver audio line and a tone injection point for the TS-1J single tone encoder/decoder.

Scanning Functions - Scan functions of the HT-1200 are available in both the Memory Mode and the Bandscan Mode. In the Memory Mode, all ten memories are scanned either in up or down sequence and an active channel causes the scan to pause while the channel is active and resume scan when the channel frequency again clears. In the Bandscan Mode, the scan proceeds from the frequency on the dial and scans up or down, as selected by the user, to the end of the band at which time it returns to the frequency of origin.

Search Functions - In the Search Mode, the scanning proceeds as in the Scan Mode until a signal is found, it then stops on the frequency it found active and remains there. The memories are scanned in the Memory Mode and the Band is scanned in the Frequency Mode. This feature is particularly useful to the traveler who is moving along the highway or is in a strange city and does not know the frequencies in use. As each active frequency is found, it can be inserted into memory and these can be "scanned" for activity and interest.

Scan Step Selection - The HT-1200 can scan in any multiple of 5kHz steps. This means 5kHz, 10kHz, 15kHz, and even up to 100kHz scan steps are available. These are set through the keyboard using the number keys to enter the step value and then pressing the STEP button.

Free Split Capacity - This facility is provided by using Memory "1" for transmitting whenever the offset switch is set to M1 and the SPX/DPX switch is set to DFX. Any frequency within the range of the radio is available.

SPECIFICATIONS

General

Frequency Range - 144.000-147.995 MHz plus MARS (143.0-149.995MHz)

Mode - Frequency Modulation

Size - 170mm(H) x 68mm(W) x 47mm(D)
(Exclusive of knobs and antenna)

Weight - Less than 700 grams with NiCd battery

Antenna - 50 Ohm/BNC connector

Battery - Voltage 9.6VDC (8 x AA)

Capacity 500 mA, NiCd rechargeable

Current Drain - High Power (4W) 900mA

Low Power (1W) 200mA

Rx-Sql 35mA

Rx-Full Audio 150mA

Memory B/U 4mA

Wide Frequency Range Operation - The HT-1200 has the capability of operating somewhat outside the amateur bands for the purpose of serving in the various MARS and CAP programs. The actual specifications are limited to the HAM Bands.

Texas Instruments Microprocessor - The TMS-1000 microprocessor used in the HT-1200 is the most popular of the four bit micro-processors used today. The program capacity of this device and direct LED drive makes it the most efficient choice for a battery operated device.

High Power Capability - Because nothing is more frustrating than unsuccessfully trying to access a repeater when you really need it, we built the HT-1200 to produce about four watts over the HAM BAND so that when you need the extra punch to get thru you have it.

Low Power Capability - High power is great, but it's expensive in terms of battery life and how many hours you can carry your HT-1200 without recharge. The one watt position of the HT-1200 controls the driver stage of the transmitter which conserves as much current as possible.

L.E.D. Display - The L.E.D. display was chosen because of the capability of the TMS-1000 to drive it without intermediate circuitry and its reputation as the most rugged and long lived in the displays. The display in the HT-1200 is normally off and illuminates when a key is depressed. It remains on for a few seconds, and then turns itself off; but if desired, the display can be locked on. By recessing the display sufficiently into the case, the numbers are readable when the unit is in direct sunlight. In light levels at or about the twilight level, the L.E.D. is more readable than the LCD and lamp system; and for lower levels, the superiority increases.

Keyboard Entry of All Frequencies - The HT-1200 enters all the frequencies available from the keyboard without resorting to complicated tricks to get to the MARS frequencies. Also entered via the keyboard is the 5kHz information. This allows memorization of this information and scanning to the exact frequency (not 5kHz away) in both the bandscan and memory modes.

50 Watt Amplifier - This amplifier was specifically mated to the HT-1200 capabilities. It is conservatively rated at 50 Watts and is actually capable of as much as 40% more dissipation. This allows you to install the HT-50L and forget it's there.

Leather Case - Nothing beats real leather for protecting your investment in radio gear. So we provide this optional top grain leather case for the HT-1200 in a matching brown tone. The case has a belt clip which fits the wide belts very snugly and allows for getting it safely on and off without removing your belt.

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Transmitter

Power Output - High Power 3.5W minimum (4W Nominal)

Low Power 1.0W

Modulation - Frequency Modulation

Deviation - 5kHz

Spurious Radiation - 60dB

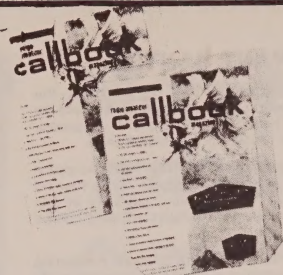
Receiver

Type - Double superhet, 16.9MHz and 455kHz I.F.

Sensitivity - 0.35 uV at 12dB SINAD

Spurious Performance - 60dB rejection or better

Bandpass Characteristics - +/- 7.5kHz at 6dB, +/- 15kHz at 60dB or better



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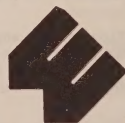
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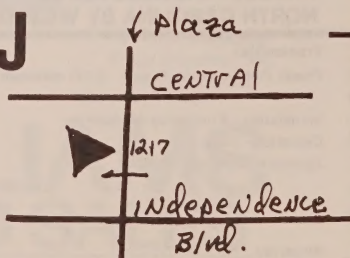
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NEW CVRA DIRECTORS TO MEET IN JANUARY 1981

The regularly scheduled Winter Annual Directors meeting will be scheduled in January, according to Lane Tarleton, KC4CD, president of the CVRA.

He said no date has been set as of yet, but the meeting location will probably be in Danville, Va. this year. Announcements prior to the meeting will

be mailed to all new Directors, Vice-Directors, and appointees, advising of place, time and date.

Highlight of the forthcoming meeting will be the installation of the five new Directors for the CVRA, along with their Vice-Directors. A general session of getting acquainted with the organizational operation will be held.

Several by-law changes will also be considered by the new group, as well as plans for new promotional ideas to bring in more full and associate membership.

Tarleton said he hoped all the new Directors-elect will make plans and hold a Sunday in January open to attend this meeting.

"It's the best way in the world for a new officer to get trained in a short period of time, when there is someone to explain everything, and answer questions," Lane said.

NEW W4/K4/N4 QSL BUREAU

The W4/K4/N4 QSL Bureau has been moved from Boyce, Va. to Charlotte, N.C. The Charlotte, Mecklenburg Amateur Radio Society assumed responsibility of the Bureau on October 1.

All files of envelopes and unsorted incoming QSL cards were brought to Charlotte in late September by the W4BFB club members.

QSL volume to the bureau is currently running about 15,000 pieces a week. Address for the new W4/K4/N4 QSL Bureau is: P.O. BOX DX, CHARLOTTE, N.C. 28220.

Any Amateurs utilizing this Bureau who already had envelopes on file with the old group, need not worry, their envelopes have been transferred to Charlotte. Amateurs who work DX and have W4/K4/ or N4 calls should be sure to send SASE manila envelopes (approx. 5x7) to the Bureau. An extra stamp or two to enable more cards to be mailed in one envelope would be advisable also.

LITTLE MT. REUNION HELD

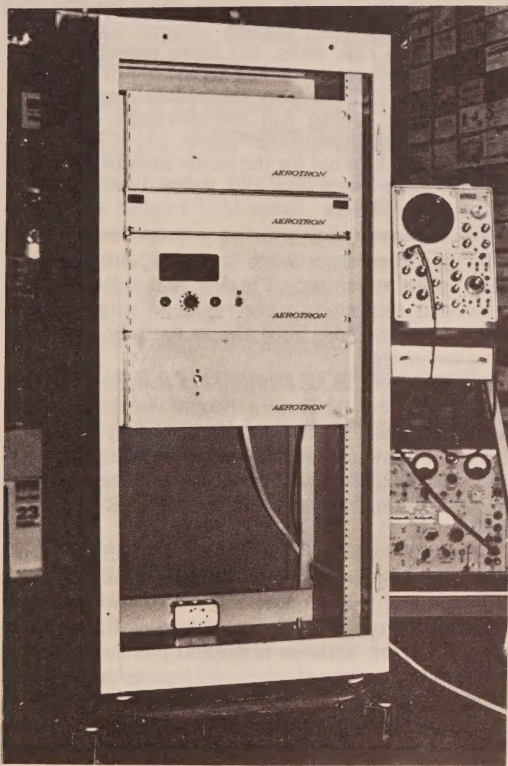
—by Randy Cannon, KB4CO

Every year the town of Little Mountain, South Carolina has what is known as the Little Mountain Reunion. This year's reunion, which was held on August 2, consisted of a foot race, country and bluegrass music, a craft fair, parade, political speeches, and other related events.

A group of local amateurs provided communications for the foot race on 146.52 simplex. After the race, a fun-expedition and amateur radio exhibit was set up with QSO's being made on 40, 20, 15, and 10 meters.

Little Mountain is the site of the 147.81/21 K4AVU repeater, which was used as talk-in for amateur's attending the reunion.

13-73 RALEIGH REPEATER



Raleigh, N.C.: The Raleigh K4BWC (13-73) repeater adds a new addition to the Raleigh-Wake County area. Its make up consist of an 80 WATT Aerotron repeater with emergency back up battery power, a Phelps-Dodge duplexer and a Hustler G7-144 Antenna.

The repeater site is located just north of the beltline on U.S. Hwy. No. 1, on top of the Sheraton-Highwood Motel. Antenna height is approximately 90' HAAT.

It is equipped with an auto patch with access to member-control operators but the auto patch will be brought up for any transit amateur wishing to make a local call.

Photo by: Walt Short, N4SW

STARTING WITH THE SPARK GAP NOW ON TO MICROCOMPUTERS

- by A. D. Link, K4ICL

It was two in the morning on one of the hottest summer nights of the year. The spark gap had been set and reset for the hundredth time, the slide bar on the receiver had been adjusted for perhaps the three hundredth time, and the harsh hiss of the other Ham's spark gap pounded the earphones when the static crashes would let it get in. Suddenly, out of nowhere, a strong clear musical note was heard — a note not a hiss! The history of Ham Radio changed, forever.

The spark gap gave away to the continuous wave (CW) note because of a technological advance unprecedented at that time, the invention of the electron tube.

It was not too much later that the marvellous electron tube made something else possible. Imagine being the first Ham ever to hear another Ham's voice over a radio receiver. Surely, the Hams at that time must have thought that the electron tube was the last and final word in electronics.

But, in 1949, in some obscure laboratory center something happened that made the invention of the electron tube almost trite. The transistor was created! Soon thereafter the history of Ham Radio changed again. Hot, bulky, power eating, inefficient tubes were replaced with tiny almost insignificant looking transistors.

Just a few years later the transistor was made smaller and combined with other transistors in such a way as to form an integrated circuit or IC. This technology, made possible in part from our space effort, allowed hundreds of transistors, resistors and capacitors to be constructed on a single piece of silicon, a chip. The IC Chip is now the mainstay of the modern Ham Rig.

Unknown to most Hams, this progression from relays, to tubes, to transistors, to IC Chips allowed for equally important advances in the area of digital circuits. The first computing machine was mechanical. The next generation of computing machines was characterized by the massive application of relays. The capacity of these first "computers" was small and they were very slow.

In the 40's the first successful "high speed" machine was built in the bottom of a stadium at MIT. Made of miles of wire and electron tubes, it was so large that the maintenance staff walked inside the machine to work on it!

After the transistor was introduced large, bulky,

ONLY TWO REPS PER MEMBERSHIP

On several occasions clubs who own several repeaters and join the CVRA as Full Members fill out a form for each repeater and name two representatives to CVRA for each repeater, however they pay only one membership.

According to the CVRA By-laws, a repeater group owning several repeaters has two options:

(1) They may join with one membership (\$8.00) per year, and list all their repeaters as Full Member repeaters. Only TWO persons may be named as representatives to the organization, usually the trustee and one other person.

(2) If the club owns, say three repeaters, they may join each repeater as a separate full member, and list two Full Member representatives for each membership. Three full memberships, with six representatives would cost \$24.00.

Most all clubs opt for the single membership and list all their repeaters and name two representatives to CVRA.

tube-type computers were replaced with cheaper solid state machines. Finally the still-too-large transistor computers were replaced with smaller and faster machines built almost entirely on the IC Chip technology.

From relays to IC Chips . . . sounds familiar doesn't it? You Old Timers thought you didn't know anything about Microcomputers. Yet, it is a fact that you know more about the guts of those little black boxes than 99 percent of the fellows you hear using big words like kilobytes and tristate buss buffering!

Just as it was true that the use of electron tubes required more learning on the part of all Hams of the past, we will need to learn even more as the microcomputer changes the history of Ham Radio again. We are between historical planes, between the past technology of tubes and transistors and the future technology of large scale integrated chips — the heart of the microprocessor. Like the Pioneers of the old tube radio days, we will have to change again . . . but faster! The first Ham Rig with a microcomputer in it is already on the market.

This is the beginning of a change that will make all of the others mentioned above appear almost microscopic in stature. Rigs are going to lose their frequency knobs, sideband will give way to digital voice transmission, and communications as we know it today, like the spark gap, will fade away into the changing history of our wonderful hobby.

The key to all of this is the microprocessor. What we as Hams can do with this centimeter square of silicon staggers the imagination.

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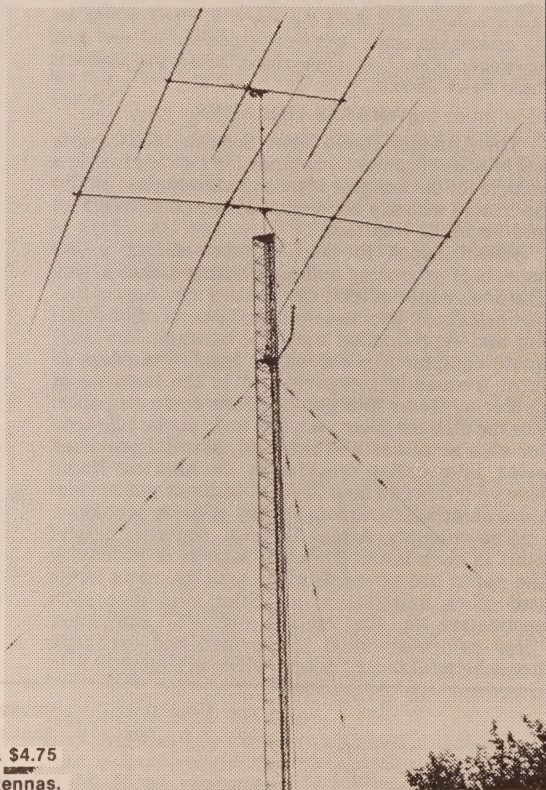
Mosley Penetrox grease — \$1.29

Mosley Weather Guard Antenna Coat — 8-oz. can. \$4.75

Will coat most antennas — for protecting your antennas.

If you want or need something not listed above, call us, we may have it or can get it for you. All of the above items are standard stock items and we will try to fill your order promptly. We have a limited variety of utility

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poles, hardware and can supply utility poles in the Greensboro, N.C. area only. We also install towers and antennas in the Greensboro area. Call us if you have a problem, we will design a system for you.

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ARNS CAN HELP CLUB NEWSLETTER EDITORS

—Reprinted from ARNS Bulletin

(Editor's Note: We receive about 25 different monthly club bulletins. We find in many of these bulletins, the editors are begging for news from their membership. It is unfortunate that editors have to do the bulk of a job when putting out a club newsletter, but that's the way it is. There is help for the established editor, and most especially the new club newsletter editor. An organization called the Amateur Radio News Service.)

WHAT IS THE ARNS

The Amateur Radio News Service (ARNS) is a world-wide organization founded in 1965 to provide a vehicle for exchanging ideas among Amateur Radio Operators who are concerned with club newsletters and/or public relations.

ARNS hopes to help member-editors in all aspects of producing and distributing a club paper. The news editor quickly discovers a whole set of unique problems, because standard practices of printing and reproduction may not be available. Adequate equipment is seldom at hand. The editor is most frequently inexperienced in the business of gathering items and getting them down on paper. For the club member assigned to do public relations for club activities and projects, parallel problems arise. Information provided by the Amateur Radio News Service can help the club editor or public relations chairman overcome many of these problems.

The monthly ARNS Bulletin contains helpful hints in each issue. Different aspects of producing the paper are covered, while articles, news items and other material in a lighter vein give solid assistance to the editor and PR chairman. "How-to" information is provided and exchange items help fill those "holes" which are inevitable in

any club bulletin. Keyed entirely to the radio amateur, the material in the Bulletin makes it possible for the editor to produce an attractive, readable and well rounded paper.

In past issues of the Bulletin, a series of articles was presented covering all aspects of producing a club paper. These include choosing an editor, originating and preparing copy, assembling the sheets, folding and stapling to finally placing the paper in the mail. These articles, together with additional information have been consolidated in the booklet "The Club Paper," furnished to new members upon joining ARNS.

ARNS conducts annually, a publication contest. Editors in all categories of clubs are invited to submit papers for judging. Certificates of Achievement are awarded those papers judged to be recognized in each class. Additionally, the editor of each paper submitted receives a confidential brief evaluation of the points considered to be best in that paper and, where applicable, constructive suggestions for improvement.

Because of the benefits to the organization's paper, and since the editor has access to continuing information, most clubs underwrite the editor's membership fee.

You are cordially invited to join the Amateur Radio News Service and to enjoy its benefits and experience the satisfaction of helping others by sharing your own expertise.

The CVRA REPEATER JOURNAL is happy to supply a reproduction of the ARNS application blank below.

*We Extend a Cordial Invitation
to you to Join ARNS*

To: Fran Norrick, WB9WPS, Secretary ARNS
Route 6, Box 239, Kankakee IL 60901

Reprint from
CVRA JOURNAL



Enclose is \$4.00 (\$3.00 annual membership dues and \$1.00, first year only for a copy of "The Club Paper"). Memberships entered during October-March are \$1.50 plus \$1.00, first enrollment as above. Membership expires on March 1, annually. Make checks payable to "Amateur Radio News Service."

Name: _____ Call _____

Address: _____

City: _____ State: _____ ZIP: _____

Club Paper(s) with which associated, past and present: _____

**Amateur Radio
News Service**

WICKER RETIRES FROM ARRL

—by Wayne C. Williams, K4MOB



L. PHIL WICKER, W4ACY

L. Phil Wicker, W4ACY, retired this year and did not run again for Roanoke Director of ARRL.

Phil said he wanted to relax a little bit at his home in Greensboro, N.C. with his wife Alice, WA4ZMA, and maybe spend more time hamming or whatever else he could find to do. Phil also retired from the Theatre Supply business this year.

Wicker first began his stint as Assistant Director for the Roanoke Division of ARRL in 1954. In 1966 he was elected Vice-Director to Vic Clark, W4KFC who was Director. During 1974, Clark was appointed to the office of First Vice-President of the League, and Wicker moved into the position of Roanoke Division Director. He was re-elected to a second and third term in 1976 and 1978.

"I've done a lot of traveling for the League", Wicker said, "I believe I counted up about 7,000 to 8,000 miles driven a year."

Phil also said he attended 30 to 35 hamfests around the area per year, 2 board meetings for the League, various Committee meetings, and an

average of 1 to 2 Amateur Radio club meetings per month.

"This didn't leave any weekends to sit around the house and relax," Phil said.

Wicker said all that traveling and all those hamfests were very rewarding. He said he has met thousands of Amateur friends over the years, and enjoyed seeing them again every year in his travels.

"They've all been very good to me," Phil recalled, "I'll miss them too, but we aren't going to stop going places, we're just going to cut back some so we will have more time for personal things around home."

Phil Wicker can look back over his reign with pride. As Roanoke Director, the Roanoke Division was Number 1 in the league for Life Memberships, and usually Number 1 in the league in membership (calculated in relation to total number of Amateurs in Division). Phil said approximately 46% of all licensed Amateurs in the Roanoke Division were ARRL members.

For many of you readers out there, Phil's retirement will be a loss for you, not seeing him at all functions like over past years. For us in the Greensboro area, it will be gain, he'll be around us more.

A job well done Phil, you deserve a rest and may you enjoy your time at home — but don't forget us, we certainly won't forget you.

REPEATER INDEX TO REFLECT MEMBERSHIP IN FEBRUARY ISSUE

—by Wayne C. Williams, Editor

Again this year, we will update our CVRA Repeater index according to the 1981 membership figures in the February Journal, as we did in 1980. Prior years, anyone not renewing prior to January 1, deadline for Journal corrections, was held as a member until the May issue.

Again this year, anyone who was a member in 1980, and fails to get their membership into the Full Membership chairman's hands by JANUARY 1, 1981 will have a "D" listed beside their repeater listing, meaning "delinquent membership". If that repeater fails to renew by the May issue, the "D" will be changed to an "N" for Non Member. Many repeater owners expressed a desire to do this again this year. The "D" is a handy reminder to those forgetting that they haven't renewed as of yet.

Of course any repeaters who were not members in 1980, but join by January 1, 1981 will have the "N" removed from their repeater listing.

So everyone go for the December 31 mark to be eligible for the CVRA REPEATER HONOR ROLL which will be published in the February Journal, or have their membership in before January 1, to keep their membership status in the listing.

MECKLENBURG ARS PREPARING VARIOUS 1981 PROJECTS

—By Theresa Parris, N4AFY

The Mecklenburg Amateur Radio Society has been very busy the past few months. A new repeater has been ordered and will be put on the 63-23 sub band frequency. No definite date has been set as to when it will be on the air.

Once again the W4BFB bunch was on top of Roan Mountain on the Tennessee side for the September VHF contest. Propagation was not very good during the weekend but the participants still had a nice weekend up in the cool weather.

Plans for the 1981 Charlotte Hamfest to be held on March 21-22, 1981 are underway. Jerry Malin, WB2LEI and Wayne Starnes, KU4V, have been named Co-chairmen for this year's event.

A trip to Boyce, Va. was made September 27-28 by several members of the club. The groups brought back the ARRL W4/K4/N4 QSL Bureau to its new home at W4BFB. As of October 1, the club began operation of this incoming QSL Bureau. Mail for the bureau is currently averaging about 15,000 QSL cards a week. Mail for the QSI Bureau should be sent to: P.O. Box DX, CHARLOTTE, N.C. 28220. This is a special box number given to the club by the Post Office.

Novice and General/Technician classes began October 1, taught by Bill Parris, AA4R and Barry Malvaney, W4WHJ.

Jerry Malin, WB2LEI, has been appointed as the new Emergency Coordinator for Mecklenburg County.

The Clubroom is located in the basement of the Red Cross Building, 2425 Park Road, Charlotte, N.C. and is open each Tuesday from 7:30 until. . .

The regular Club Meeting — Business and Program is held on the last Tuesday night of each month at 7:30 in the Red Cross Auditorium. All visitors are welcome.

COMMUNICATOR CLASS EXAM SAMPLE TEST QUESTIONS

—From Chattanooga Tri-State FM Bulletin

1. How long is a 50 foot piece of coaxial cable?
(A) 54 Baluns (B) Better than 36db (C) Too Long
(D) Depends if it is vertical or horizontal
2. Who invented the yagi antenna?
(A) Mega Hertz (B) Andre Kostelanetz (C) A CBer from Chicago (D) Efriam Zimbalist, Jr. (E) What's a yagi?
3. The ionosphere is charged by:
(A) BandAmericard (B) Navy Radar (C) Long DX Signals (D) A long extension cord
(E) Flying Junk

JOURNAL POLICY FOR LISTINGS

Occasionally we are asked by clubs outside CVRA territory to list their club meeting, or net in the Club Calendar and Net Register section. We must decline the request.

The policy of the CVRA Journal is to list club meetings and nets in our Club Calendar and Net Register section on a permanent basis only if the club or group lies within the CVRA district boundaries.

The same holds true for repeater listings. As a public service, we automatically list non-member repeaters in the five Districts of Virginia, North Carolina, South Carolina, Tennessee and West Virginia. When you see repeaters from other States in the CVRA District listings, it is because they have joined the CVRA as a full member repeater and earn the right to be listed, even though they are not within an official CVRA district. This is the only condition which we list out of CVRA District repeaters in the CVRA repeater index. Generally we run secondary listings of neighboring states almost every issue, as a public service to our readers.

The only way we can list an out of CVRA district repeater in our main listing, is for that repeater to join the CVRA as a full member repeater. (the Editor)

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DIRECTORS MEETING—MINUTES

The annual meeting of the Carolinas-Virginia Repeater Association was held August 30, 1980 at the Governor's Inn in Shelby, N.C. President Lane Tarleton called the dinner meeting to order at 6:50 p.m. A quorum was present.

A detailed treasurer's report was submitted by Carl, N4AA, showing a balance on hand as of August 30th of \$1,907.62.

In commenting on the proposed name change, President Tarleton took the state directors to task for not responding to the secretary's letter requesting directors to submit a list of possible new names for the CVRA.

After a discussion of the existing list of proposed new names for the CVRA, Ed Buffington, N.C. Vice-Director moved that the association change its name to Common Voice Repeater Association. The motion died for lack of a second. After more debate of the name change a recess was declared/and at 7:58, after which several informal discussions were held between the officers present, Ken Woodward, N.C. Director proposed another name in the form of a motion. It was seconded by Jack Watson, S.C. Director, that the name "CVRA — Southeastern Repeater Association" be adopted. The motion passed 5 - 0.

President Tarleton commended Tennessee and West Virginia for decided increases in associate membership.

Charlie Durst, WA4WTX, was named overall chairman of the nominating committee to oversee the formation of nominating committees in each Association district, VA., N.C., S.C., Tenn. and W. Va. It was noted that O.D. Keaton had already submitted three names as possible Association officials from Tennessee. The three are: Billy Gilly, W4YXA...Sam Kirby, WB4HAP, and Harry Simpson, W4MI. K4SE, representing Tennessee at the meeting was advised that the names officially be sent in stating which office which person was nominated for.

During the meeting President Tarleton responded to allegations he said have been made concerning conflict of interest. Lane is president of G.I.S.M.O., a ham oriented radio supply store located in Rock Hill, S.C. Lane denied he has ever used his position as President of the repeater association to advance the growth of his business, stating that in the nine months he has been President he has never turned in an expense report to reclaim costs incurred while carrying out his duties as President of the CVRA.

President Tarleton recommended increases of from \$40, to \$45 for the cost of a full page ad in the Journal and a general increase in all advertising rates to take effect Jan. 1, 1981. He also recommended that all past due advertisers be denied future advertising in the Journal until their accounts are brought up to date and paid. The motion to

REPEATER MEMBERSHIP

If you are a repeater owner and you notice there is an "N" beside your repeater listing, that means you are not a full member of the CVRA. You may join for only \$8.00 per year and have the Journal delivered to TWO persons you wish to have receive it. Write the RepeaterMembership Chairman. Her name is listed on page 2 of the Journal.

REPEATER HONOR ROLL TO AGAIN BE FEATURED IN FEBRUARY ISSUE

A very competitive and popular listing will again be made in the February 1981 REPEATER JOURNAL. The "CVRA 1981 Honor Roll of Repeaters" will be listed again this year.

The Honor Roll of repeaters contains a listing by State (District) of each repeater which renewed or joined CVRA as a full member PRIOR to DECEMBER 31.

In 1980, we had a total of 85 full membership repeaters listed, compared with 67 in 1979 and 28 in 1978. Last year, North Carolina copped first place with 41 early bird repeaters. Placing 2nd was Virginia, followed by Tennessee, third, South Carolina, Georgia and West Virginia.

Lets see who will be the "biggie" this year. Wonder if North Carolina can win again? Which of our two new members, West Virginia or Tennessee will lead, will they pass any of the "old time" CVRA Districts.

All repeater owners who were full members of CVRA in the 1980 calendar year will be receiving a renewal application in the mail near the end of November. Fill it out immediately and get it in before DECEMBER 31, to be eligible for the CVRA Repeater Honor Roll.

Repeater owners who where not full members in 1980, write your State Director, or CVRA Full Membership Chairman for an application and get on the roll for 1981.

We expect to see at least 125 Full member repeaters listed in the "Honor Roll". BE SURE YOUR REPEATER IS ONE OF THEM. Get your renewal or new membership application in to the Full Membership Chairman before DECEMBER 31. Which District will have the most?????

increase advertising rates on said date was passed.

Phil Wicker, W4ACY, Roanoke Division director of the ARRL, who attended along with several other league supporters, announced his retirement from the ARRL, saying he would not be a candidate for re-election to his office. Gay Millius, W4UG IS running for Director and John Kanode, N4MM has announced for vice-director. Inclosing his remarks before the meeting, Wicker presented the League's Certificate of Merit to Wayne, K4MOB for his service to amateur radio.

In discussions during the meeting, Jack Watson (S.C.) saw the need of a separate frequency coordinator, rather than the job being delegated to state directors.

Amos, K4WQS, vice-director of Virginia suggested each state have periodic directors meetings in addition to the regular Association directors meetings twice per year.

There being no further business, the meeting adjourned at 9:28 p.m.

*Respectfully submitted,
Mike Williams, KC4AO
Secretary*

800-000-0000

— . . . —

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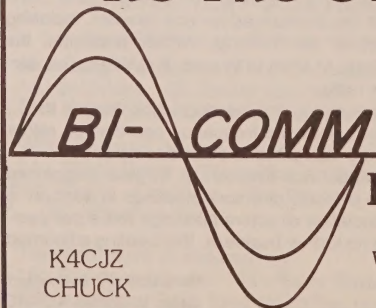
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BATTERIES CAN EXPLODE! BY OVERVOLTAGE CHARGING

Many of the new handhelds on the market today are using lower voltage to run them, in the neighborhood of 9.6 volts and some even down as low as 7 volts. Users are cautioned to use proper charging devices and especially proper cigarette lighter plug cables for automobiles.

Huland Gardner, WB4THL of Wilson, N.C. was displaying his Yaesu FT-202 with a side completely blown out at the Shelby Hamfest in August. Huland said he had his FT-202 on a straight wired cigarette lighter cable charging the batteries from his truck. The handheld was laying on the dashboard in the sun. He thinks a combination of the 13 to 14 volts coming from the alternator, plus the hot sun attributed to the explosion, which Huland said "sounded like a shotgun blast" when it went off.

The safest route to follow would be to buy the relatively inexpensive cigarette lighter cables with built-in voltage dropping resistors for your handheld. If you plan to build your own, be sure to take in consideration the voltage increase when your vehicle is running most importantly, DO NOT EXCEED the recommended voltage for your new handheld. (Editor)

"DAUGHTER SAFE" VIA W4BFB

Jack Mitchell, KA4FHS, a member of the Mecklenburg ARS (Charlotte, N.C.) went to the club house on August 12 at 7:30 p.m. A fairly expected routine night turned into anything but routine and quite rewarding.

During the evening, Jack received a phone call from a Mr. Robert Bard of Charlotte, who was concerned about the safety of his daughter Gretchen, who was aboard a yacht which was cruising Northern Hattian waters at the same time Hurricane Allen was devastating the southern Hattian peninsula on August 4-6.

Mr. Bard, said the boat was to cruise island to island and supposed to be at Labadie, off Cap Hatien on this date he was calling. He had sent cables to see if his daughter was safe, but had received no reply. He had been referred to the Charlotte club (W4BFB) by the Red Cross, and wondered if Ham Radio could help him.

Mitchell checked and found the Maritime Mobile Service Net was in session as that very time, so he tuned up the club's rig and checked. Through a relay from net control, he sent the message to a station at Labadie.

Within the hour, Jack was able to report back to Mr. Bard that his daughter was safe and her yacht was indeed in port at Labadie. A grateful Mr. Bard thanked Jack for the prompt service and said he would be able to sleep for the first time in 12 days. (From Mecklenburg ARS News)

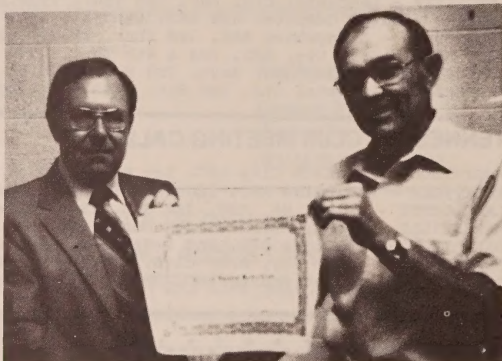
PLATEAU ARA AFFILIATES WITH ARRL

—by Bill Wilson, WA8TYM

The Plateau Amateur Radio Association became a chartered member of the ARRL at its September meeting in Fayetteville, West Virginia.

ARRL Section Communications Manager Karl Thompson, K8KT presented the League Charter to Club President Bill Lilly, WB8SLY. In comments before the gathering, Thompson detailed the benefits the club will receive now and commended them for their association with the League and its provision to public service to the Fayetteville area.

The SCM also discussed the subject of Amateur License plates for West Virginia radio operators.



PLATEAU ARA President Bill Lilly, WB8SLY proudly receives the ARRL Membership Affiliation Charter from ARRL SCM for West Virginia, Karl Thompson, K8KT. The ceremonies took place at the Club's September Meeting.

FROSTFEST 1981—NEW LOCATION

The Richmond Amateur Telecommunications Society (RATS) announces their Frostfest 1981 to the be held Sunday, January 11, 1981 from 8 a.m. to 4 p.m.

The hamfest will be moved to new and larger facilities at the Chesterfield County Fairgrounds in nearby Chesterfield, Va. The new facilities will have spacious aisles, plenty of on-site parking and plenty room for dealers and tailgaters.

Other features of the hamfest include many prizes ranging from a Color TV to Bird Wattmeter and Digital Volt-Ohm Meter. Contests will be held for CW, homebrew equipment and auction sales. Admission is \$3.00 at the gate, with additional \$3.00 for 4 ft. long flea market table and \$2.00 each vehicle for tailgating.

Further information about Frostfest '81 can be obtained by writing Richmond Amateur Telecommunications Society, P.O. Box 1070, Richmond, Va. 23208.

SOUTH CAROLINA CLUB MEETING CALENDAR

Information Supplied by clubs

ANDERSON - RC. 4TH Thur. 1930 Andsn. Cty. Arts Bldg. - Lunch Brk Fri. Noon, Quency's Steak House
CHARLESTON - Holiday VHF Soc. 2nd Wed. 2030 at Pinehaven Shopping Center Meeting Room
CHARLESTON - Charleston ARS, Inc. at Home Federal Meeting Room, Ashley Plaza S. S.
CHARLESTON - Trident ARC. 3rd Wed. 1930 at Park Cir. Presby. Church
CHERAW - Chesterfield Ctv. ARS. 3rd Tue. 1900 at Chesterfield Technical Inst.
CLEMSON - Clemson Univ. ARC. - (During School Year - Posted prior to meeting)
COLUMBIA - Columbia ARC. 1st Mon. 1930 at S. C. Electric and Gas Building
DILLON - Dillon Cty. ARC. Each Mon. Informal, 2nd Mon. Formal 1900 at Lion's Club Bldg., Wash. St.
EASLEY - Altamont ARC. 4th Tue. 1930 at First Federal Bank Building
FLORENCE - Florence ARC. 1st Tue. 1930 at Shoney's
FLORENCE - Florence FM Repeater Assn. 3rd Mon. 1930 at Florence Darlington Technical Center
GREER - Greer ARC. 1st Mon. 1930. Meeting location announced monthly.
GREENVILLE - Blue Ridge ARS. 1st Tue. 1930 at Red Cross Building, 3rd Tue., Dinner.
GREENVILLE - The Dutch Lunch Club. Mon. 1245 at S&S Cafeteria
GREENWOOD - Piedmont Tech. ARC. 1st Mon. 1930 at Piedmont Tech.
KEEOWEE - Keeowee, Toxaway ARC. 3rd Tue. at Keeowee, Toxaway Visitors Center
LANCASTER - Lancaster Cty. ARC. 3rd Thur. 1930 at USC, Lancaster Campus
LAURENS - Caro. Computer and ARA. 2nd Fri. Gen. Mtg.; 4th Fri. Digital workshop
ORANGEBURG - Orangeburg ARC. 3rd Thur. 1930 at Elks Club, Hwy 301 N 601
ROCK HILL - York Cty. ARS. 2nd & 4th Thur. 1930 at Club Room, Beaty Mall, Rock Hill
SUMTER - Sumter Repeater Assn. 3rd Mon. 2000 at County Office Building Conference Room
WALTERBORO - Coastal ARA. 2nd Sat. 1900. Meeting announced on 31/91 net.

TENNESSEE CLUB MEETING CALENDAR

Information Supplied by clubs

KNOXVILLE - Fountain City ARC. 1st Mon. 1800 at Chubbies Restaurant, Broadway Shop. Cen.
KNOXVILLE - Knoxville ARC. 3rd Fri. 1930 at Knoxville Fire Dept. Training Center
LAFOLLETTE - Walnut Mt. ARC. 3rd Mon. 1900 at Lafollette Recreation Center
MARRIVILLE - Smokey Mt. ARC. 4th Mon. 1930 - Hall Road
OAK RIDGE - Oak Ridge ARC. 2nd & 4th Mon. 1930 at Oak Ridge Civic Center
ROAN COUNTY - Roan Cty. ARES Club. 2nd Tue. 1930 at Old Pond Grade School, Rockwood
SEVIERVILLE - Sevier County ARC. 3rd Thur. 1930 at Presbyterian Church

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AVIATION COUNCIL SEEKS AMATEUR ASSISTANCE IN WEST VA

Charleston, W.Va.—Three Kanawha Valley pilots have formed the West Virginia Aviation Council, a non-profit organization to consolidate all active fliers and pilot groups in the state. The purpose is to provide a consensus of the aviation community for development of aviation facilities, and make available local aeronautical expertise to public agencies and administrators.

"No one asks the pilots, who are the only experts on their needs," says Bud Martin, executive agent for the new corporation. "We believe it's time our voice is heard again in this State."

Martin, a retired Air Force officer who has been a pilot for thirty-five years, was Director of Operations for West Virginia's Civil Air Patrol, and served with West Virginia's 130th Air National Guard unit and Strategic Air Command.

Membership in the Council is open to any West Virginia resident pilot, aviation organizations in the State, or other interested corporations.

In a letter to the CVRA, Bud Martin, Executive Agent of the Aviation Council has some interesting possibilities for utilizing Amateurs and repeaters for the purpose of helping locate missing aircraft. They mention in the letter having each repeater augmented with a 121.5 mhz monitor capable of alerting someone of an Emergency. Obviously we cannot connect such a monitor up to a repeater to cause it to go on the air automatically when an emergency occurs, but it is felt that someone in the West Virginia area might have some sound ideas of how Amateur Radio might assist in Aircraft Emergencies. Martin is an Amateur and life member of ARRL. His call is KV4FR. Anyone with any ideas should contact Martin direct: George T. Martin, Jr., West Virginia Aviation Council Inc., P.O. Box 489, Charleston, W. Va. 25322. Telephone (304) 744-6896. Here is a reprint of Mr. Martin's letter:

CVRA
P.O. Box 5655
Greensboro, N.C. 27403

Gentlemen:

We wish to interest the VHF repeater community of Amateur Radio operators in our mountain areas in contributing to search efforts for aircraft alarms. Your organization is the only continuing cohesive effort at bringing repeater groups to cooperation in the sectors of our interest.

Basically, we would like to see each repeater augmented with a 121.5 MHz monitor capable of alerting someone to the presence of an Emergency Locator Transmitter sweep-tone within its listening range.

I am certain many of your member organizations,

as well as the Associates, are familiar in some detail with the requirements of such a system. Ideally, a listening installation could provide bearing information valuable to locating the origin of an ELT signal.

We are presently seeking a grant to fund installations useful to this end, both are engineering and design costs, and actual hardware. We would appreciate any input from your people useful in the pursuit of our goals.

The Council does not fund subscriptions for its staff, so I am sending my own membership fee in order to follow the progress of any efforts made for our program.

Flying safely,

George T. Martin, Jr.
Executive Agent
(KV4FR/Life ARRL)

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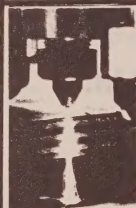
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Typeset and Printed By

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calendar of coming events

The CVRA Journal will be glad to publish Events in your area taking place which are of interest to the entire area. Send information to CVRA Editor 1 month prior to Journal Publication date.

1981 HAMFEST CALENDAR

JANUARY

11 Frostfest '81, CHESTERFIELD, VA.

FEBRUARY

7-8 Florida St. ARRL Conv. MIAMI, FLA.

22 Winter Ham Fest, ELKIN, N.C.

MARCH

7-8* COLUMBUS, GA.

21-22 Mecklenburg ARS, CHARLOTTE, N.C.

21-22 ARRL NAT'L CONV., ORLANDO, FLA.

APRIL

5* Hamfest, COLUMBIA, S.C.

19* RARS Hamfest, RALEIGH, N.C.

24-26* Hamvention, DAYTON, OHIO

MAY

3* Hamfest, GREENVILLE, S.C.

16-17 Durhamfest, DURHAM, N.C.

23-24* Hamfest, GASTONIA, N.C.

23-24* Hamfest, KNOXVILLE, TENN.

JUNE

7* Hamfest, MANASSAS, VA.

20-21* Atlanta Hamvention, ATLANTA, GA.

JULY

4-5* Hamfest, JACKSON MILL, W. VA.

26* Hamfest, NASHVILLE, TENN.

AUGUST

2* Winchester Hamfest, BERRYVILLE, VA.

15-16* Fayetteville Hamfest, FT. BRAGG, N.C.

23* BARC Hamfest, BLUEFIELD, W. VA.

30* Hamfest, MORGANTON, W. VA.

SEPTEMBER

5-7* Hamfest, SHELBY, N.C.

13* Hamfest, CINCINNATI, OHIO

OCTOBER

3-4* Norfolk Hamfest, VA. BEACH, VA.

4* Hamfest, ROCK HILL, S.C.

10* Autumnfest, ASHEVILLE, N.C.

10-11* Hamfest, MEMPHIS, TENN.

11* Eastern NC Hamfest, NEW BERN, N.C.

24-25* Hamfest, CHATTANOOGA, TENN.

Hamfest dates marked with an asterisk are tentative dates, based on their schedule from 1980. These dates may or may not be correct and are offered to you as a guide for your 1981 planning. Unmarked dates are confirmed by sponsoring clubs.

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RL-11-80

CVRA RECOGNIZED BAND PLANS

6 METER BANDPLAN

33 Repeater Channels

52.01 - 53.01
52.03 - 53.03
52.05 - 53.05
52.07 - 53.07
52.13 - 53.13
52.15 - 53.13
52.15 - 53.15
52.17 - 53.17
52.23 - 53.23
52.25 - 53.25
52.27 - 53.27
52.33 - 53.33
52.35 - 53.35
52.37 - 53.37
52.39 - 53.39
52.41 - 53.41
52.43 - 53.43
52.45 - 53.45
52.47 - 53.47
52.55 - 53.55
52.57 - 53.57
52.63 - 53.63
52.65 - 53.65
52.67 - 53.67
52.73 - 53.73
52.75 - 53.75
52.77 - 53.77
52.83 - 53.83
52.85 - 53.85
52.87 - 53.87
52.93 - 53.93
52.95 - 53.95
52.97 - 53.97
52.99 - 53.99

SIMPLEX

51.51
51.53 etc.
to 51.99
52.29
52.49
52.51
52.525

RADIO CONTROL

53.1
53.2
53.4
53.5
53.6
53.7
53.8

CVRA 2-METER BANDPLAN

Repeater Channels

144.51 - 145.11
144.53 - 145.13
144.55 - 145.15
144.57 - 145.17
144.59 - 145.19
144.61 - 145.21
144.63 - 145.23
144.65 - 145.25
144.67 - 145.27
144.69 - 145.29
144.71 - 145.31
144.73 - 145.33
144.75 - 145.35
144.77 - 145.37
144.79 - 145.39
144.81 - 145.41
144.83 - 145.43
144.85 - 145.45
144.87 - 145.47
144.89 - 145.49

146.010 - 146.610
146.025 - 146.625
146.040 - 146.640
146.055 - 146.655
146.070 - 146.670
146.085 - 146.685
146.100 - 146.700
146.115 - 146.715
146.130 - 146.730
146.145 - 146.745
146.160 - 146.760
146.175 - 146.775
146.190 - 146.790
146.205 - 146.805
146.220 - 146.820
146.235 - 146.835
146.250 - 146.850
146.265 - 146.865
146.280 - 146.880
146.295 - 146.895
146.310 - 146.910
146.325 - 146.925
146.340 - 146.940
146.355 - 146.955
146.370 - 146.970
146.385 - 146.985
146.400 - 147.000
146.415 - 147.015
146.430 - 147.030
146.445 - 147.045

146.460 - 147.060
146.475 - 147.075
147.600 - 147.000
147.615 - 147.015
147.630 - 147.030
147.645 - 147.045
147.660 - 147.060
147.675 - 147.075
147.690 - 147.090
147.705 - 147.105
147.720 - 147.120
147.735 - 147.135
147.750 - 147.150
147.765 - 147.165
147.780 - 147.180
147.795 - 147.195
147.810 - 147.210
147.825 - 147.225
147.840 - 147.240
147.855 - 147.255
147.870 - 147.270
147.885 - 147.285
147.900 - 147.300
147.915 - 147.315
147.930 - 147.330
147.945 - 147.345
147.960 - 147.360
147.975 - 147.375
147.990 - 147.390

144.0 to 144.5 SSB

144.9 to 145.1 SSB

145.5 to 146.0 SSB

Satellite

145.85 to 145.975

SIMPLEX FM

146.49
146.52
146.55
146.58

147.42
147.45
147.48
147.51
147.54
147.57

CVRA 220 MHZ BANDPLAN

55 Repeater Channels

222.30 - 223.90
222.32 - 223.92
222.34 - 223.94
222.36 - 223.96
222.38 - 223.98

222.40 - 224.00
222.42 - 224.02
222.44 - 224.04
222.46 - 224.06
222.48 - 224.08

222.50 - 224.10
222.52 - 224.12
222.54 - 224.14
222.56 - 224.16
222.58 - 224.18

222.60 - 224.20
222.62 - 224.22
222.64 - 224.24
222.66 - 224.26
222.68 - 224.28

222.70 - 224.30
222.72 - 224.32
222.74 - 224.34
222.76 - 224.36
222.78 - 224.38

222.80 - 224.40
222.82 - 224.42
222.84 - 224.44
222.86 - 224.46
222.88 - 224.48

222.90 - 224.50
222.92 - 224.52
222.94 - 224.54
222.96 - 224.56
222.98 - 224.58

223.00 - 224.60
223.02 - 224.62
223.04 - 224.64
223.06 - 224.66
223.08 - 224.68

223.10 - 224.70
223.12 - 224.72
223.14 - 224.74
223.16 - 224.76
223.18 - 224.78

223.20 - 224.80
223.22 - 224.82

223.24 - 224.84
223.26 - 224.86
223.28 - 224.88

223.30 - 224.90
223.32 - 224.92
223.34 - 224.94
223.36 - 224.96
223.38 - 224.98

SIMPLEX

24 Channels

223.40
223.42
223.44
223.46
223.48
223.50
223.52
223.54
223.56
223.58
223.60
223.62
223.64
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223.82
223.84
223.86
223.88

CVRA



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BECKLEY	WR8ACO	146.34	146.94	N
BKLY/FLAT TOP MT	WR8AKZ	146.25	146.85	A
BLUEFIELD	WD4RPT	144.89	145.49	A
BLUEFIELD	WD8OGY	146.415	147.015	
BRIDGEPORT	WR8ALC	147.705	147.105	EA
BRIDGEPORT	WR8ALC	147.72	147.12	EA
BUCKHANNON	WDSLWI	145.93	147.93	
BUCKHANNON	K8WYH	146.25	147.85	N
CHARLESTON	WR8AER	146.22	146.82	N
CHARLESTON	WB8CQV	146.28	146.88	N
CLARKSBURG	WB8ZVS	146.22	146.82	A
COTTAGEVILLE	WR8AKV	146.31	146.91	N
EAST RIVER MTN*	WR4AXS	146.16	146.76	N
ELKINS	WR8AOH	146.04	146.64	N
FAIRMONT	W8JM	146.31	146.91	
HUNTINGTON	WB8EZR	146.04	146.64	N
HUNTINGTON	WR8AGH	146.16	146.76	N
HUNTINGTON	KA8BKX	147.90	147.30	N
KINGSTON/LICK KB	W8FG	144.87	145.47	
LOGAN	WR8ADD	146.37	146.97	N
MARTINSBURG	WB8VUZ	147.855	147.255	N
MCMECHEN	W8WUX	146.31	146.91	N
MORGANTOWN	K8LG	144.83	145.43	
MORGANTOWN	WB8YZT	146.085	147.955	N
MORGANTOWN	W8CUL	146.16	146.76	
MULLENS	WR8AKX	147.63	147.03	
NEW MARTINSVILLE	WR8ABY	146.34	146.94	N
OAK HILL	WD8OQJ	146.19	146.79	
PARKERSBURG	WR8ACJ	146.37	146.97	PA
PARKERSBURG	WR8ACJ	147.96	147.36	
PARSONS	N8ER	144.73	145.33	N
PENNSBORO	WA8CND	147.90	147.30	N
PRINCETON	WB8NRK	146.46	147.06	
RAVENSWOOD	WA8USO	146.07	146.67	
RICHWOOD	K8VKB	146.34	146.94	
SCOTT DEPOT	K8SLI	147.87	147.27	N
SPENCER	WB2HVN	146.01	146.01	N
ST ALBANS	WR8AJVS	146.40	147.00	
TERRA ALTA	WB8PHU	147.60	147.00	
WEIRTON	WR8AQA	146.34	146.94	
WELCH	N8ACQ	144.85	145.45	
WHEELING	W8JDH	146.16	146.76	

BIGGER THAN WHO????

Some well known ham in one of the 5 CVRA Districts in correspondence to JOURNAL Editor, Wayne, mentioned that he really appreciated the fine coverage in the JOURNAL. Well his exact words were "Wayne — Tnx for a Journal that's making the same progress as my wife....(she's getting bigger and better)!"

As for the name and location of this infamous ham...we'll NEVER tell. He's too good a news source to lose him after his wife clobbers him. (Editor)

CVRA Financial Report as of August 30, 1980:

INCOME:	total-79	Jan-Aug79	Jan-Aug80
Advertising	2985.75	1644.50	1820.65
Associate Membership	6885.75	4204.25	5193.50
Full Membership	1102.00	670.00	799.00
TOTAL	10953.50	6518.75	7913.15

EXPENSES:	Total-79	Jan-Aug 80
Journal Mailing	958.79	800.00
Journal Printing	6767.09	6300.38
Officer/Director	290.99	351.51
Postage	393.93	600.00
Miscellaneous Printing	877.04	425.75
* Miscellaneous Expenses	1019.32	63.72
TOTAL	10307.16	8540.36

* Includes \$686.40 for window stickers available for sale to members.

Starting balance Jan. 1, 1980	2482.53
Income through August 30, 1980	7965.45
Total	10447.98
Expenses paid through August 30, 1980	8540.36
Balance on hand as of August 30, 1980	1970.62

Carl E. Smith, N4AA
Treasurer

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AD AND NEWS DEADLINES

FEB. — APRIL ISSUE JAN. 2, 1981

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THE CVRA—SOUTHEASTERN REPEATER ASSOCIATION STATE DIRECTORS, VICE DIRECTORS AND ASSISTANTS

For Assistance in Repeater Coordination, Frequency Coordination, Changes in Repeaters, and Any other Assistance You May Require from the CVRA. Contact Your Local Director or His Assistant.

VIRGINIA

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Carter Cogle, K4ARO
1667 Varina Avenue
Petersburg, Va. 23803
(804) 733-8411

ASST. DIR. (SW VA.)
Bob May K4SE
Post Office Box 30
Jonesboro, Tenn. 37659
(615) 753-3662

VICE-DIRECTOR
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Danville, Va. 24541
(804) 792-0443

ASST. DIR. (N. VA.)
Thomas Gooding K4LHB
206 West Maple Ave.
Sterling, Va. 22170
(703) 430-3202

ASST. DIR. (TIDEWATER)
Wally Burkette, WA4KXV
242 Raintree Road
Virginia Beach, Va. 23452
(804) 486-1555

ASST. DIR. (Central)
Larry Lewis, WB4JB
101 Jane Randolph St.
Forest, Virginia 24551
(804) 525-5901

NORTH CAROLINA

DIRECTOR
Ken Woodard WA4BVW
Route 2, Box 407
Canton, N.C. 28716
(704) 235-8354

VICE DIRECTOR
Ed (Buff) Buffington W4VGZ
2736 Woodbury Drive
Burlington, N.C. 27215
(919) 227-6356

ASST. DIR. (CENTRAL)
Larry H. Schwarz, WA4RHY
1752 Wellons Drive
Fayetteville, N.C. 28304
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SOUTH CAROLINA

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(803) 772-7350

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ASST. DIR. (COASTAL)
Thomas L. Martin, WB4PVL
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Walterboro, S.C. 29488
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All the above Directors terms expire Dec. 31, 1980. See inside story for new Directors.